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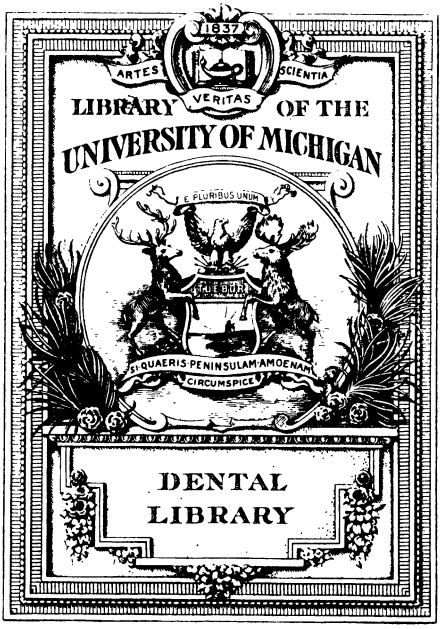
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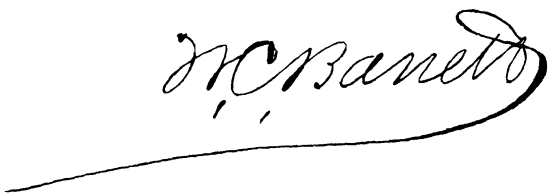

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Progressive Course of Practical Instruction

Original Contributions

Original Contributions,—Continued

Not Original.

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PORCELAIN INLAYS.

(By F. Ewing Roach, D. D. S., Professor of Porcelain Dental Art, University of Illinois.)

Upon the question of how best to obtain the matrix, the profession is divided. Some advocate taking an impression of the cavity and therefrom secure a die and counter, with which to swage the matrix. And the advocates of the swaged matrix can enumerate several advantages over the burnished. On the other hand, there are a great many who are following the later method with equal if not better results, and at a great saving of time and labor. While granting that good results may be obtained by the swaged method, I believe the burnished matrix to be better, therefore I shall endeavor to describe this method only, and as we are to deal with high fusing body, platinum, of course, must be used for a matrix.

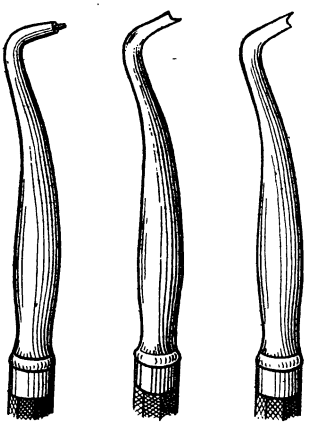
Having the cavity properly prepared, the next step is to secure a matrix which shall be an exact impression of the cavity to be filled. Platinum foil, .0001 of an inch in thickness, is most suitable for this method, and it should be thoroughly annealed before attempting to use it. This may be best accomplished by placing the piece in the furnace and carrying the heat considerably beyond the melting point of pure gold. The heat of the ordinary bunsen flame is insufficient to properly anneal platinum. The foil furnished by some of the dealers is annealed ready for use, so that the first burnishing may be done without annealing, and in a majority of cases a sufficiently accurate adaptation may be obtained for the first bake, after which the foil will be nicely annealed for the second burnishing.

The piece to be used for the matrix should be cut sufficiently large so that when burnished into the cavity it will extend beyond the margins slightly all around, and at some convenient point there

should be left, for holding with the pliers while packing, a longer pointed projection.

The problem that now confronts us is how to get this thin delicate foil adapted to all surfaces of the cavity without tearing at the bottom and without wrinkles about the margins. The means and methods of accomplishing this part of the work are many. Some operators use rubber points, some pieces of spunk, and others use small pellets of cotton, moistened and packed in piece by piece until the cavity is filled and the foil forced into apposition with the sur-

Fig. 1.



A. B. C.

faces of the cavity. While I have gotten good results with the various methods mentioned, I have adopted the following procedure, which in my hands serves me best: Place the piece of foil over the cavity and with a large pellet of moist cotton, that will fill the cavity when rolled tight and held with pliers, gradually force the foil into the cavity and continue packing until the matrix is well fitted to the walls of the cavity. By using the large piece of cotton, there is less liability of tearing the matrix and wrinkles are reduced to a minimum, both in size and number. If, however, the matrix should be torn at the bottom of the cavity, it will not interfere with the fit of the inlay, as the body will bridge the space when packing. The cotton should now be removed and all wrinkles burnished out.

I have designed a form of instrument which is almost universal as a margin burnished. The principle is also adaptable to engine burnishers for both straight and right-angle handpieces, and when used in this way affords one of the most rapid and effectual means of obliterating marginal wrinkles. The engine burnisher is especially adapted to burnishing the margins, and should be drawn across the wrinkles to be burnished out with a sweeping motion, with the burnisher revolving rapidly in the same direction. In this way the wrinkles are spun out very easily. The point of the instrument should extend into the cavity and the shoulder allowed to rest upon the outer surface.

In Fig. 1 is shown three hand margin burnishers which, in connection with the engine burnishers, will meet the requirements of all cases. (A) represents what I term the universal burnisher. This one form can be used successfully on all margins except cervical and some approximal margins on bicuspids and molars, and for these surfaces (B) and (C) will be found admirably adapted. (B) is to be used on mesial and (C) on distal cavities. The flattened oval end should be brought to bear upon the inner marginal surface of the cavity and the pointed projection upon the outer surface.

Fig. 2.

Fig. 2 shows engine burnishers. These are made in three sizes and for both straight and right-angle handpieces.

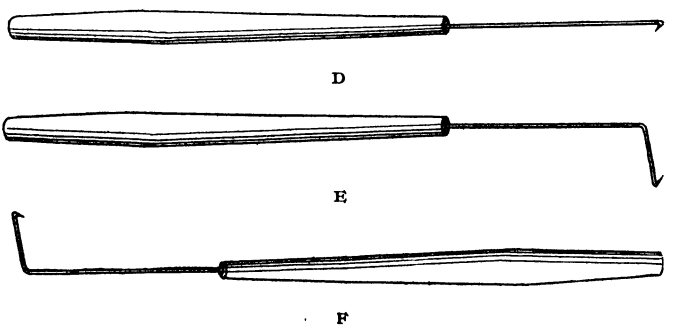
As a means of holding the matrix while burnishing, I have found a small, stiff, curved instrument is best suited for this purpose. It should be laid across the cavity and held in contact with two points on the matrix, on the side of the cavity opposite to that which is being burnished. It affords a secure means of holding the matrix in place and does not obstruct the view.

In small cavities a perfect fit of the matrix may be secured and maintained through the process of baking without alteration, but in cavities of any considerable size it is well to reburnish the margins after the first bake.

In removing the matrix from the cavity, great care should be taken not to distort it. If it draws with difficulty and if there is any suspicion that it has been distorted in the least, it should be re-

turned to the cavity and refitted, when it will usually come out easily. Among the most difficult matrices to draw out are those small approximal cavities in the anterior teeth, especially where considerable space is not available, and it is the overlap of the matrix, in most cases, that causes the trouble. The matrix should be trimmed very close to the margins of the cavity on the side opposite to that to which the matrix is to be drawn. Any appreciable overlap on these surfaces, which is usually the gingival and often the lingual of the anterior teeth, is wholly unnecessary, and almost invariably hinders the draw of the matrix.

Fig. 3.



In Fig. 3 is shown three small instruments designed to aid in the withdrawal of the matrix. (D) has a straight shank and can be used successfully in most cases where inlays should be inserted, and with (E) for mesial, (F) for distal cavities in molars and bicuspids, the requirements are fully met. The matrix is less liable to be distorted when removed with these hooks than by prying and pulling at the edges. They are made very delicate, yet rigid and with a very short needle-pointed hook, so that it may be passed into the cavity and hooked into the matrix, first on one side and then on the other, gradually working it out. They can be easily made of 22 gauge piano wire or an old broach, or can be gotten from the dealers at a very trifling expense.

All matrix burnishers should be kept polished bright and clean, as the slightest amount of oxide upon the surface of the burnisher will be rubbed off on the matrix, and the result is very likely to be a dark line along the margin of the inlay, when the matrix is stripped off.

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

Formerly Clinical Professor of Operative Dentistry, Chicago College of Dental Surgery.

CHAPTER VI.

DENTAL CARIES.

Why should teeth become carious? Our patients often ask that question and it has not been so many years that anyone could answer. Some years ago Professor W. D. Miller demonstrated beyond a doubt that caries was due to the action of micro-organisms. He proved it by producing carious conditions in sound teeth identical with those found in the teeth in the human mouth. His bacteriological laboratory experiments are now repeated every year and are thus verified over and over, in all up-to-date dental colleges. Recent graduates from such institutions may have a pretty good idea of the manner in which a tooth is attacked, but there are some, perhaps, who could not answer the questioning patient further than to say, "microbes," and leaving it to be inferred, perhaps, that the little animals gnawed into the teeth something as a rat gnaws a hole in a board.

Micro-organisms are constant in every human mouth, and the question arose, on the announcement of Professor Miller, why all teeth and all surfaces of teeth exposed to the fluids of the mouth were not acted upon, and especially why did vulnerable points remain immune often for long years before finally yielding. While the microbe theory—a demonstrable fact, rather—is universally accepted, it is realized that some degree of immunity prevails in most all mouths. If it were not so, we would all be toothless early in life. There seems to be conditions that resist the ever-present micro-organisms most of the time, and yet yield to the extent that vulnerable points are attacked sooner or later. Investigation has gone so far in the cultivation of micro-organisms in the laboratories of several scientific researchers that it has been discovered that certain forms in the course of development form a gelatinous substance which, when conditions favor it in the human mouth, attaches itself to the teeth, forming a covering over a colony of microbes, confining them and the acid they produce against the tooth substance.

This film, however, is easily dislodged by the mastication of food and other disturbing influences, which goes to indicate the value of the tooth brush and powder and other hygienic measures in common use.

Now, when the acid produced by a colony of microbes begins to attack the tooth, what takes place? As is well known, the enamel is composed of rods and the rods of globular bodies, all held together by a sort of cement substance. The acid acts to dissolve this cement first between the rods, then between the globules, until they crumble. As this process goes on and the pit being formed becomes deeper, there is more and more room and better protection for the ever-increasing horde of microbes, and destruction goes on in the same relative proportion. This continues until the dentine is reached, the acid action going considerably in advance of real decay and disintegration. The process differs somewhat in dentine, the acid dissolving out the calcic salts, and usually destruction goes on with greater activity than in the enamel.

This, briefly and simply, is the process of decay in human teeth, according to the understanding of the best authorities of the present day, and the gelatinous film referred to being protected in pits, fissures, recesses and the contact points between the teeth, make of those places what we call the vulnerable points.

There are evidently conditions in the mouth, presumably in the fluids, that in some manner successfully antagonize either the growth of micro-organisms or the destructive influences they propagate, as has already been referred to, but the nature of those conditions is not yet fully understood. If they were and it were possible to bring about those conditions at will, the salvation of teeth would resolve itself into simple prophylaxis.

It is not a matter of record whether Adam ever used a toothbrush or in consequence of neglect sought out a dentist for relief of an aching tooth, but we may assume that the handiwork of our Maker was perfect and that primitive man was immune from caries of the teeth and thus from tooth-ache, though that does not imply that he might not have had stomach-ache from eating forbidden fruit. I believe that it is a fact that the disposition of the human teeth to decay has grown with our so-called civilization, though civilization takes more hygienic precautions about the teeth than was ever thought of in earlier periods. I have no doubt nature

intended the mouth to be sweet and pure and free from decayed teeth, and the ever-constant microbe was of the good kind in the early day instead of the bad kind that we are afflicted with in this age.

The etiology of caries, it is clear, is due to the growth of micro-organisms, but just why their influence is held in check for long periods is not clearly understood except on the theory that physical changes occur that permit of the inroads at one time and not at another. We are all well aware of the fact that in certain cases caries will go on to quite extensive destruction of tissue and then things change, from some cause, and the parts that would seem to almost insure a contrary effect, become immune. Decay stops from some cause, and after disintegration of the already broken down tissue the parts become dense and resistant; and this even when the dentine has been more or less involved. These phenomena may be better understood some day and to our advantage in being able to control conditions. At present we can only modify by the customary hygienic rules, brushing the teeth frequently and using floss silk to clear the embrasures between teeth, and repair damage done by some process of filling or stopping cavities after debris has been carefully removed and the cavity sterilized.

Dr. C. N. Johnson says in his work, "Principles and Practice of Filling Teeth": "In the light of what we now know, it may be laid down as a conservative statement to say that with proper attention the teeth of most individuals may be saved through life, so far as decay is concerned, and it is confidently believed that an intelligent conception on the part of the profession of the phenomena prevented by immunity and susceptibility will add materially to the possibilities of such consummation."

(To be continued.)

DENTAL THERAPEUTICS.

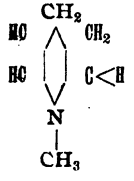
BY GEO. W. COOK, B. S., D. D. S., CHICAGO, ILL.
Professor of Bacteriology and Pathology, School of Dentistry, University of Illinois.

In the discussion of methods and means of extirpation and devitalization of the pulp, as we have previously said, there are a great many things to be taken into consideration. The local and also general constitutional condition must be taken into consideration, for upon these two points depends the usefulness as well as appearance of the organ, and especially is it true if it be any of the anterior teeth. Nothing should ever be placed in a tooth for the destruction or removal of the pulp that would bring about discoloration.

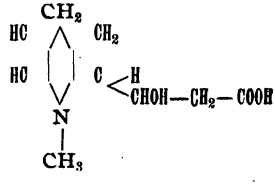
We have previously referred to the method, so commonly used, known as pressure anaesthesia. The agent that is commonly used in pressure anaesthesia is cocaine. This substance is a comparatively new therapeutic agent, though for centuries the coca plant has been in use in South America, India, Ceylon and Java. From the leaves of the coca where they are cultivated in Peru and Bolivia the cocaine is accompanied with other alkaloids. There seems to be some difference in quantity and quality of cocaine found in different countries.

Cocaine is somewhat like atropine in its general characteristics, and when decomposition takes places it breaks up into several different constituents. When a portion of cocaine is placed in water and heated for some little time, methyl alcohol is driven off, leaving a compound known as benzoyl-ecgonine, and when further broken up there is formed benzoic acid and ecgonine. This last-named substance is an oxypropionic which comes from the pyridine group. In the breaking up of the chemical complexed substances just named the chemical formula is written thus, which may serve as an indication of the complexity of the molecular structure of these alkaloidal substances:

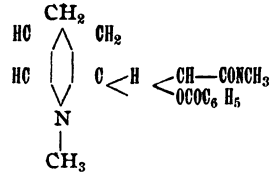
COCAYL.



EEGONINE.



COCAINE.



In this chemical formula it is possible to change some one of these side chains in a way as to substitute various atoms in the molecule for various other atomic substances. In the second chemical molecular group Ecgonine, this agent can be converted into the alkaloid cocaine by adding benzoic acid and methyl. Every one who uses cocaine should bear in mind that it is a highly complexed molecular substance and is easily changed when coming in contact with any other substance, even water.

The main action of cocaine when introduced into the animal body is on the central nervous system and on the terminal ends of the sensory nerves. When the drug is introduced into the system in small quantities it usually brings about a pleasant or disagreeable excitement with increased pulse, quick and deep respiration, with the characteristic dilation of the pupils, headache and dryness of the throat. The reflexes are usually increased and convulsive movements are observed and when a quantity sufficient has been administered tonic or clonic convulsions with the heart extremely accelerated.

This description alludes only to a certain class, for it has been observed in other cases that the convulsions are almost entirely absent and fainting and collapse at once take place. In such cases the skin is cyanotic and the heart's action is slow and weak. The general effect that is observed is usually a stimulating of the central nervous system, which might be mistaken at times as poisoning by atropine.

The natives of the various countries where the coca leaves are used have found that they have a very beneficial effect upon long endurance and readily relieve fatigue of both a physical and mental character. From the study that has been made of this drug it increases the higher functions of the cerebrum. It has been found when rubbed on the surface of the brain it is a protoplasmic poison and at once lessens the irritability of the physical properties of the brain substance. According to the pharmacological action of this substance it at first acts upon the higher cerebral nervous centers and gradually works down into the less complex structure of the brain and spinal cord. Its general effect on respiration and heart action varies so greatly in different individuals that no definite symptoms can be laid down whereby one may readily recognize all of the typical phenomena that follow its general effect; suffice it to say

that it is a protoplasmic poison and produces death by stimulation followed with paralysis of the various physiological functions of the body. When the agent is administered locally it paralyzes the sensory nerve endings. When it is administered directly to the system it stimulates the sympathetic nervous system which causes the dilatative condition of the pupils. It acts on all protoplasmia very readily, but its effects are more marked on the nerve cells. An experiment that can be easily made is one where the amoeba can be placed in water and a very minute quantity of cocaine added to the water, and after a few moments the amoeboid movement is soon arrested. It has been thought by some that when the systemic administration has been accomplished that it affects the central nervous system from above downward. When locally administered it at first acts upon the sensory nerve endings and then extends to other nerve cells, bringing about the characteristic symptoms of paralysis.

It has been found that when cocaine is injected near a nerve trunk that it has very little effect upon the physiological activities of that nerve, but if it be injected into the nerve sheath it has a very rapid and paralyzing effect upon the distribution of the peripheral nerve endings of that nerve trunk. Consequently such observations have brought about the practice that has been favorably spoken of in recent medical literature, to the effect that when cocaine is injected into the spinal subdural canal it brings about a lowering of the physiological activities of the fibers of the nerve roots and brings about complete anaesthesia and deadens the sensibilities to touch. In this method of administration the motor nerves are but little affected and consciousness remains normal.

It is a well-observed fact that when cocaine is applied to the surface of the mucous membrane it brings about an anaemical appearance of the surface, and when from a two to a ten per cent solution has been applied the characteristic white condition of the mucous surface is an indication of the appearance of anaesthesia of the part.

The use of cocaine locally was first brought about by application to the eye. When applied here it causes considerable dilatation of the pupil, while the iris still reacts to light. The eyelids stand wide open and in general the eye has the appearance the same as when the cervical sympathetic nerve has been stimulated.

As has already been said, the local anaesthetic properties of cocaine are due to its destructive action on the protoplasmia on the end organs. It has been thought that when cocaine is injected into the tissue that it will cause a necrosis of the cells, followed by sluffing, but the majority, if not all, of these necrotic conditions are due to the introduction into the tissue of some micro-organic life which causes the necrotic condition.

Of course, it must be borne in mind that an agent that is capable of arresting the protoplasmic action of the cell, if continued long enough, would, of course, bring about the degenerative change in the cell protoplasmia, but in the case of cocaine it will be remembered that its anaesthetic properties rapidly pass away, and when applied to the mucous membrane to the extent that it brings about that anaemic appearance, there is no sign of its causing necrosis in that particular part; but it is fair to presume that when injected into the tissue that it would have more of a poisonous effect than it would to the cells of the mucous membrane, that has both inherited and acquired a protective tendency to foreign substance, and especially to substances that have an injurious effect upon cell life.

Since the introduction of cocaine in therapeutic use many persons have become habitual users of cocaine, acquiring the habit much in the same way as in the use of morphine and opium. Cocaine has sometimes been administered to break up the morphine habit, resulting in the acquirement of the cocaine habit in connection with the morphine habit.

When the cocaine habit has been established to a great extent, it has been observed that a gradual degeneration of the central nervous system takes place, causing halucination, loss of appetite, sleeplessness, usually terminating in despondency and insanity.

In cases of cocaine poisoning there is no well-defined symptoms to be absolutely relied upon, but in those cases where blood pressure is seemingly increased amyl-nitrite has been beneficially used. Where there are convulsive seizures small quantities of chloroform and ether have been used with beneficial results.

In the profession of dentistry cocaine has been extensively used in various operations in the mouth, and especially for the extraction of teeth. Dr. C. P. Pruyn of Chicago was among the first to make an extended study of cocaine and its use in the extraction of teeth, and great credit is due him for his experiments and observation.

This drug seems to be only beneficial for extraction when it is hyperdermically injected, and as is well known, the hyperdermic injection of the drug means its rapid diffusion through the general system, bringing about the symptoms peculiar to the drug injected. As this subject will again be brought up, I shall not discuss it further here, but will return to pressure anaesthesia as applied in the extirpation of the pulp.

As has already been said, the action of cocaine, locally, acts on the sensory nerve endings. Whether the effect on the protoplasmia is due to the perfect ionization of this cystalline substance or whether the substance is a protoplasmic poison in itself without being broken up, but there is one thing that seems clear, that in solution of sufficient quantity to perfectly ionize the molecule it is isotonic to the cell wall of the sensory nerve cells, because it has an elective affinity for this particular kind of protoplasmia and when brought in direct contact is rapidly diffused through the cell wall.

It must be borne in mind that many salt solutions are not rapidly diffused through the cell wall, therefore the action is not rapid, but cocaine is one of the rapidly diffusable substances and necessarily its effect locally is very rapid. And for this reason it must appeal to those who wish to extirpate the pulp and fill the root at the same sitting. The method that is usually practiced in pressure anaesthesia is that of taking a small pledget of cotton and moistening it in distilled water and dip it in the cocaine powder, placing it over the exposed portion of the pulp, and if it is not thoroughly exposed it is sometimes possible to anaesthetize the pulp in a way that it is very easy to remove all the overlying dentine, and bring into view a clear field of exposed pulp tissue, when another application of the powdered cocaine and with a little pressure bring about absolute anaesthesia of the pulp. When the cotton has been saturated and dipped into the powdered cocaine as above recommended, it is placed in the cavity of the tooth, and with a warm piece of gutta percha or a piece of vulcanized rubber and with a ball-shaped burnisher that almost fills the cavity, is then placed on top of the warm gutta-percha or the piece of vulcanized rubber and with a gradual increase of pressure force the mass into the tooth; and after a few minutes it will be found that the pulp, if in a healthy condition, will be partially or wholly anaesthetized, and with a barb broach the pulp can be completely removed at once.

Another method, and one that even proves to be more successful than that just described, is by the use of an instrument invented by R. B. Tuller of Chicago, in which he has a small bit of rubber tubing placed upon this ball-shaped instrument, and a little pledget of cotton is placed on the free end of the little rubber tube, in which condition it is carried into the cavity of the tooth and placed in the most dependent position of the pulp; pressure is then exerted as previously described. The small bit of rubber tubing prevents any escape of the cocaine solution, therefore holding it in direct contact with the pulp until it is completely anaesthetized.

It is understood that all operations of such nature should never be undertaken until every precaution of antiseptics has been fully complied with. The tooth, before placing the rubber dam on, should be thoroughly cleansed with alcohol, then thoroughly washed with distilled water and then wipe the tooth with chinosol or some other potent germicide. The rubber dam is then placed in position after the tooth has been thoroughly sterilized with the agents at hand. The mechanical excavation of the cavity can then proceed with repeated wiping out the cavity with a non-coagulable germicide, for if a substance was used that would coagulate the prolongation of the pulp, it would prevent the diffusion of the cocaine solution, and it is very necessary to have the cavity, as thoroughly as is possible, freed from all forms of bacteria and their products, because, as we have previously stated, where bacteria is present to any extent in organic substance they may produce ptomaine, which is an alkaloidal substance in its chemical appearance, and many of them will decompose a solution of cocaine and bring about a very toxic substance that is valueless so far as its action on the sensory nerve cells.

It has been observed by most everyone who has used cocaine to any great extent that a solution of cocaine is a very unstable compound and is very easily decomposed, and small floculent sediment will be observed in the bottom of the bottle. Sometimes this substance will be absolutely inert, while other times it will be far greater protoplasmic poison than even the cocaine itself.

It has been thought by some that the sediment observed in solutions was some form of fungus. This is hardly probable, but, however, it is possible, for there are but few vegetable alkaloids that have a deleterious effect on the low forms of vegetable life; however, there is an exception to this rule, for quinoline has been found to

have very little potent antiseptic power with very low forms of parasitic life, but those alkaloids that come from the paridine group have very little if any deleterious effect on the low forms of the fungi.

We have discussed at some length cocaine and some of the principal features of its physiological activities. When cocaine is administered locally it causes paralysis of the sensory nerve endings, and when applied directly to the nerve trunk or within the nerve sheath it causes paralysis. When administered internally it causes dilation of the pupils through the stimulation of the sympathetic nervous system, but its main physiological tendency is towards the paralyzation of the sensory nerve endings through its elective affinity for that kind of protoplasmia.

As has already been stated, its effects upon the animal body is very uncertain. With human individuals there seems to be no means of determining those who are extremely susceptible, and persons who can take doses of considerable size with perfect impunity. I have twice seen constitutional effects where applications have been only made to the pulp.

It will again be necessary to refer to cocaine when discussing the local anaesthetics.

(To be continued.)

PROSTHETIC DENTISTRY.*

By B. J. Cigrand, B. S., M. S., D. D. S.
(Professor of Prosthetic Dentistry and Technics of School of Dentistry, University of Illinois.)

CARVING THE MODEL.

It is imperative that the model be as near in size and general contour as the mouth, since any deviation or loss of identity will of necessity mar the adaptation of the denture. In order to assure the accuracy of this trans-position, it is wise to guard against anything likely to disturb the impression. The model is to dentistry what the negative is to photography—they are basic elements entering into the success and failure of our products. Hence, see to it that the model is carefully produced. The model, when made of plaster of Paris alone, changes considerable, and this alteration will certainly affect the fit of the finished case. There are many formulae recommended to overcome the expansion of plaster, but few are worth serious consideration. Plaster of Paris, when it has incorporated with it an equal amount of powdered kaolin (Chinese clay), I have found gives excellent results as material for models. The Chinese clay overcomes the changing disposition of plaster and yields a smooth and strong model.

Another method which I have been using and with which I get good results, is to take a combination impression—i. e., take impression of the mouth with modeling compound (compound contracts or shrinks slightly); then pour into this impression a mixture of plaster of Paris sufficient to make a mere film of plaster on the modeling compound imprint. When the plaster model is made it will expand about as much as the compound contracted, and hence a good model is the result.

The great majority of dentists coat the model with sandarach varnish or shellac, since this gives the model a smooth surface and assists in giving a semi-polished surface to the model-side of the denture.

There are many other excellent methods for preparing the model to insure this result, but the one advocated by Dr. C. P. Alker is worthy of notice. He employes collodion with about three times its bulk of ether and then adds powdered tin till the solution is well impregnated with metal. Then he applies this mixture to the model

by means of a small art-brush. This gives the model a film of tin so dense as to closely resemble tin-foil and so firm as to retain itself during process of vulcanization and finishing of the denture.

Sometimes it is desirable to have model of patient's natural teeth. In this event it is advisable to follow Dr. Catching's directions as follows: "On account of disease it sometimes becomes necessary to extract teeth and replace them with artificial ones. Before extracting, take an impression in modeling compound, and as each tooth is extracted place it in its position in the impression; pour the impression, which will form a model containing the natural teeth in their original positions. This model is a guide in selecting and arranging the substitutes." People often wish the artificial teeth to approach the irregularities of the natural ones, and this method is simple and certainly yields excellent results.

There are times when it is essential to have a number of models, and a very convenient method for getting a matrix which will yield perfect models is desirable. One method for accomplishing this result is to imbed the model in a moulding ring and pour about the model liquid rubber—and bake same in an ordinary stove until rubber has become semi-vulcanized. Remove the model and you have a splendid and accurate matrix.

Dr. Templeton suggests the use of printers' roller composition for a model matrix. This material can be obtained through any of the large supply houses. Imbed the model same as in preceding method and pour the roller-material on the face of the model, after allowing it to stand for several hours deliver the model and you have a serviceable matrix. It is wise to put sweet oil on the model prior to pouring the roller-composition. The roller-composition makes an excellent matrix for this purpose; being elastic, it admits of delivering the model without injuring its virtue as a permanent matrix.

(To be continued.)

ORIGINAL CONTRIBUTIONS

HYPER ANAESTHESIA.

By Austin C. Hewett, LL. B., M. D.

(Continued from July Number, 1903.)

In my last article I said, and wish here to repeat, that "To produce the analgesic influence of chloroform sufficiently to alleviate all *pain* is comparatively a trivial matter, *readily* learned and *easily* practiced." I will add, that so easily is the art acquired, that many of my patients, while I was practicing in my office in West Adams street, before spoken of, became expert in auto administration of chloroform to the point of pain avoidance. An expression of many men and women, "Well, give me the bottle," became as familiar to me as were their names and personalities. Hundreds of them are accessible who, I am sure, would gladly attest the truth of what I write.

I was at first a little fearful that such facility of use, and familiarity with effects in allaying and prevention of pain might induce a chloroform habit, but not in a single instance has such been the case. I also feared that some one thus instructed would or might use the drug for suicide. My fear in that respect, also, has long since been allayed. How fanciful was the apprehension is readily understood when we consider how difficult it is for those *au fait* even in anaesthetics to end their own lives thus. The very condition of analgesia is one of restfulness, ease and quiet. That of anaesthesia one of incapacity to hold a bottle, sponge or mask to the mouth and continue inhalation and renew or continue the supply of the anaesthetic after anaesthesia has once been produced. been produced.

Again, when once a person has been profoundly anaesthetized, and the lethal effect at all prolonged, there is created a distaste, even a disgust many times pronounced, and though the condition of analgia is one to be desired for the alleviation of pain, persons familiar with the primary and resulting influences often

hesitate, wavering between the desire for ease and dread of inhalation.

It may not be deemed germain to my subject, as announced by the caption to these articles, to speak at any length upon analgesia, it being in no sense "hyper anaesthesia," but the latter is so somber in its shading, the consideration of the dangers spoken of is so gloomy and discouraging that it is a joy to turn to the light of truth that it may become a part of the picture and that my readers may be lead to acts of mercy and know there is safety as well as benison in the claim I make.

Perhaps I cannot better close this series of articles than by again giving the anaesthetics to be used, their requisites, the way so far as is necessary to use them, and the conditions to be observed in their administration, and giving some cases as illustrative and some evidence of the correctness of my theory.

WHAT ANAESTHETICS?

To those familiar with my views and writings, it will be no surprise when I name:

CHLOROFORM.

It takes first rank in importance, in facility of use, in benign influences, in somnific power, and first in freedom from disagreeable and dangerous sequelae, and first in safety, IF intelligently its purity is demanded and preserved, and IF intelligently, *learnedly* administered.

ITS REQUISITES.

It should be absolutely *pure* and its purity as absolutely preserved. At the laboratory of its distillation it should be put in packages of colored glass, not holding to exceed one fluid ounce, hermetically sealed from atmospheric influences, and the glass covered with dark paper impervious to light. Sunlight and atmospherically poisoned chloroform will produce hysterical struggles in women, red-faced and brain-congested resistances in men, often described in lectures and books as incidents necessarily attendant upon chloroform anaesthesia. It should be given with abundance of cool, fresh air in a spacious, well-ventilated room, slowly, continuously at first, intermittently and not too long afterward, and if for full anaesthesia, *always by an expert,* who will not consent to *drown* his patient, even at the behest of an ambitious surgeon, some of whom are best skilled with knife, and least so with anaesthetics.

Next on the list in potency and safety is nitrous oxide ("laughing") gas, IF given judiciously, skillfully, and if pure. The practice of Dr. F. M. Richardson and a few others, and their teachings, I most heartily commend. "Laughing gas" given in the "usual way" without air or its equivalent oxygen, to the point of cyanosis and spasmodic jactitation, is never safe, never necessary.

Next, I am glad to name

COCAINE.

Again I write PURE. Notwithstanding the abuses that ignorance and carelessness have heaped upon this strange and wonderful plant, Natural Order Erythroxylaceae, it should be in general use for the local banishment of pain, and for its antiphlogistic properties and as a stimulant and controller of capillary circulation. Are there dangers incident to the use of cocaine? Certainly there are, as there are dangers in Strychnia, Antimony and Rhus-toxicodendron. None but an ignoramus or coward will urge non-use of a drug if study and care can eliminate the danger and secure the good. Because gluttony threatens plethora and apoplexy is no reason why we should not eat.

As an adjuvant, an aid to general anæsthesia, it is of far greater value than is generally supposed. To illustrate, suppose a case of thyreophyma with scirrhous complication presents, and thyroidectomy is decided upon; an operation requiring skill as a [illegible] and dissector of the highest possible type; which is preferable, a profound, prolonged, unintermitted anaesthesia, such as I has described in the case of Dr. ———, who died, or a full analgesia and no pain, but consciousness or semi-recognition of what is passing aided by, first, a subcutaneous local anaesthesia of cocaine, and, second, one or two sturdy assistants to hold legs and arms, and make the patient know the uselessness of struggling, a quick recovery and life?

I grant that it is more convenient for the surgeon to do his cutting when his patient is completely anaesthetized, and so it would be if the subject were moribund. But life is to be preserved, not sacrificed.

In the case named, slow, careful dissection is called for. Large bloodvessels and numerous nerve trunks and fibers are involved, and generally hours are needed in which to do the cutting, ligating, suturing and dressing. But the longer the time, the greater the danger of hyper-anaesthesia and "heart-failure" (?).

A case in my own practice of surgery, performed nearly fifty years ago, is vivid in memory and in point, as illustrating the need of analgesia in prolonged operations.

Jo-John, a Canadian Frenchman, became intoxicated once too often and after an early night's carousal started for home near midnight on a cold night in winter. On the way home he sank into a drunken sleep, but his faithful pony took sleigh and rider to the stable door of the owner and there stood till daylight revealed the plight of horse and rider. Jo-John's nose, ears, feet and hands were frozen, and his body so chilled that no one thought is possible for him to survive and no judicious care was taken in thawing fingers and toes. Death of the frozen extremeties resulted, gangrene was imminent and amputation decided necessary. Of the surgeons called, I alone pleaded for sparing as much of hands and feet as possible, and the case was by his friends given into my hands. Other consulting surgeons urged that the patient could by no possibility survive the lengthened anaesthesia required for separate cutting off and dressing the twenty fingers and toes separately. I stoutly maintained then as now that full anaesthesia was not necessary, and "partial anaesthesia," as it was then called, was ample. "Shock will kill him," said the majority. "I'll risk it," said I. "We'll not remain to assist in such an operation," said they in anger. I retorted, "Nobody wants you to." My sole assistant was a younger brother, then a medical student, who gave the chloroform, as I then practiced and now advise. For three and one-half hours I worked as busily as one could to put the four remnants of extremities into shape for healing and future use. Each finger, thumb and toe had to be severed from its fellow metatarsal and metacarpal bone above the joint connecting them. Three sturdy Frenchmen grimly looked on and held arms and legs.

At no time was the anaesthesia point reached, or sub-consciousness overborne, and a few times only did the patient moan, and after a very brief time, less than a half hour, he recovered from the chloroform, sat up on his couch, and on being asked as to suffering, said in his broken English, "Na, ye pine me not a letal—not a letal bits. I drav my pona bam-by, soon," which he did, tying lines behind his shoulders, and stubbing around in great glee, always saying when we met, "You goot doctaire. You sa-vid ma foos. I git dr-r-runk no moir-r-e;" and he did not so long as I kept trace of him.

I might truthfully relate page after page of cases, illustrative of the fact and evidencing the possibility of subduing pain by the analgic use of chloroform, ether and laughing gas, but will content myself by quoting from a report of a committee sent by the Iowa State Dental Society to Chicago, to visit my office, see me operate "painlessly," so called, and giving a letter which will speak for itself, and relating one other case, a clinic given before the Nebraska State Dental Society meeting, held in Lincoln, Nebraska, May, 1902, by Dr. Adelbert H. Peck of Chicago, dean, etc., of School of Dentistry, University of Illinois.

Case, young woman twenty or more years of age, above medium size, full plethoric build, a blond of blonds, and hysterically nervous. Two previous attempts had been made to anaesthetize her preparatory to cutting down upon and curetting the right inferior submaxilary between the ramus and right inferior cuspid, as I remember. The intervening teeth had been lost, consequent upon disease of alvaeolus or bone, or both. The operation was diagnosed as a severe one, not to be undertaken without an anaesthetic. From description of former effects and appearance of the patient, I foresaw a scene. Upon inhalation of the chloroform, as I gave it, to near analgesia, feet and legs began to appear without the slightest regard for hosiery or needlework, and I said to a sturdy dentist near, "Hold her legs down." He threw weight of stout arms and hefty chest across her knees and held her legs. Then her arms began to rotate like the fans of a Holland windmill. I said to another, "Hold her hands." He held them. Soon her underlying consciousness, of which I have before spoken, convinced her that she had become a fixture in the chair, and when I bade her open her mouth for operating she did so at once, and thence on gave but little trouble, either to the operator or during subsequent inhalations of the chloroform.

Dr. Peck operated with masterful coolness and precision, performed his part well and skillfully, and by his coolness and determination encouraged me in one of the most difficult anaesthesias that I have ever encountered.

After a rather tardy and flurrying restoration from the effect of the chloroform, she said, "The operation caused no pain."

Since writing the foregoing, the morning papers bring news of a death, "from chloroform," given by a physician to aid the patient and dentist in "painless" extraction of teeth. I quote from the Chi-

cago Examiner of Tuesday morning, September 1, 1903:

"Mrs. Lydia Seipp, the twenty-three-year-old wife of W. S. Seipp, * * * died in the operating chair in the office of Dr. ———, a dentist, of Chicago.

"All the teeth in her upper jaw had been extracted and six of her lower teeth had been removed.

"She died while under the influence of chloroform, which had been administered by Dr. ——— of Chicago.

"It was while the last tooth which was to be extracted was being drawn that she died.

"Her husband was standing by her side.

"Mrs. Seipp and her husband went to Dr. ———'s office just before noon yesterday.

"Dr. ——— tested Mrs. Seipp's heart and found it strong enough to admit of the administration of chloroform.

"The chloroform was administered, and all of the teeth except the last one were extracted.

"Mrs. Seipp showed that she was suffering.

"Dr. ——— stopped his work, and for half an hour he and Dr. ——— tried to resuscitate the woman."

The names of the physician and dentist were given, but for obvious reasons I leave them ———.

More particulars were given, but not to change the sense of what is told.

The form of the coroner's verdict is not given, but freely translated it is "heart failure"; at all events, a young woman supposedly in good health died. The number of teeth extracted is not given, but without the chloroform, however severe, the pain of extracting them would not have caused the death. Was it the anaesthetic? Without a doubt.

A list of questions come to my mind, some of which I will jot down. They will never be answered.

Was the chloroform "pure," or "commercial"? If "pure," had it been left to be poisoned by light?"

Did or does the doctor (M. D.) know the difference by smell, taste or weight between the two, or does he have to take the silence upon that point or the druggist's word?

How did he begin the administration of the drug?

Did he carry the anaesthetic beyond the stage of analgesia?

Does the M. D. know the difference and can he detect the dividing line between the analgic influence and the anaesthetic?

How long had she been under the lethal effect of the drug?

How many inhalations had she taken?

How many times had the M. D. ever given chloroform previously?

Was he and is he an *expert* anaesthetist?

If yes (to the last inquiry), where did he gain his skill; in what school?

I might multiply these questions, but to what end. It will not mitigate the grief of the young husband; it will not ease the pangs of regret on the part of the M. D. or the dentist.

Would that I might not be in duty bound to make further comment, but familiarity with chloroform for more than forty-five years has brought to me some knowledge. Taking the statements of the paper above quoted as true, the woman died from *hyper-anaesthesia.* Had a full set of superior teeth for her age and at her age, and "all but one" of her lower set been extracted without an anaesthetic she would not have died. Histories of thousands of cases affirm it. She would have suffered, perhaps fainted, but not beyond resuscitation.

What then? Shall anaesthetics be foregone because of this death? Not because of this fatality, but because of danger always attendant upon full anaesthesia. Yes! Yes; a hundred times yes. Chloroform or ether should never, NEVER be given to full anaesthesia for the extraction of teeth or for any minor operation of surgery; and for major ones, only at the bidding of absolute need and only then by *trained, experienced* experts. Had the patient been brought to Dr. F. M. Richardson or taken to any one of his acquirements, skill and beliefs, Mrs. Lydia Seipp might to-day be alive; and while I believe "laughing gas" properly given far preferable to chloroform for the extraction of teeth, if chloroform had been chosen and properly given to the analgesic effect alone, she had not died.

It gives me no pleasure to write thus; but you, Messrs. Editors and Publishers, have opened the pages of your journal for the promulgation of *truth,* not sentiments of sympathy alone. I sympathize with the doctor and the dentist, and my sympathy goes out to the young husband as well.

Where lies the blame for the seven deaths alluded to in this series of articles? Needless deaths, I charge. Should reproof fall on

the surgeons and anaesthetists alone? By no means. The teachers in colleges, the leaders of science who, deaf to warning, blind to evidence, worship at the shrine of "authority" and fail to take heed because some savant with a foreign unpronounceable name has not raised the cry. An engine comes thundering down the track, drawing a train load of humanity. A red light is swung across the track. The engineer looks and sees a farm hand, who is flashing the light. Says the engineer, "He is but a farm hand; what does he know of railroading? Get off the track." The train dashes away to a bridge gone. Had the engineer heeded the signal, lives had been saved.

A humble worker in the field of science signals before the eyes of college teachers, *"Danger in profound prolonged anaesthesia."* Eyes are turned to the signal, but "beetling brows" are elevated. "Not authority," they utter, and lives are sacrificed on that altar—authority.

Did one of them ever analgiasize a chicken, a guinea pig, dog or goat to prove or disprove the signaled words? Not even a chicken.

REPORT OF COMMITTEE ON HEWETT'S METHOD OF ANAESTHESIA.

Mr. President, Ladies and Gentlemen:

We, the undersigned, a committee appointed at the last annual meeting of the Iowa State Dental Society to visit Chicago and investigate the Hewett Method of Anaesthesia, beg leave to submit the following report:

On the morning of July 17th, 1895, at nine o'clock, per agreement, the committee met at the Palmer House and proceeded to the office of Dr. A. C. Hewett, No. 491 West Adams street.

We found Dr. Hewett, his assistants and a number of patients awaiting our arrival. Promptly at ten o'clock the first patient took the chair, and with but an hour's intermission for lunch, Dr. Hewett operated continuously till six p. m., when we adjourned to meet next morning at nine o'clock.

The committee placed in Dr. Hewett's hand, a month or more in advance, a list of operations they wished to have him perform, covering the entire field of operative dentistry.

When we arrived, Dr. Hewett extended to the members of the committee the privilege of bringing to his office *whom they wished,* designating the operation to be performed. Furthermore, the members of the committee were not only invited, but urged to perform the operations themselves, he administering the chloroform and designating when to operate.

CASE 1.

Child, aged 11 years; frail, delicate; preparing cavity for filling; very sensitive. Twenty inhalations; no pain; time of preparation, 2 minutes. "She would not dread to come again."

CASE 2.

Extracting roots sequestered by gums; 16 inhalations of chloroform. Patient said, "Not slightest pain. Knew when I opened my mouth, and when instrument was applied."

CASE 3.

OPERATION—AMPUTATION OF PULP.

Miss McL——, age about twenty-seven; dried the gum and used "compound cocaine pigment" prior to adjusting the rubber dam.

Tooth, upper right second bicuspid; surface involved, mesial. Broke down the enamel walls with a chisel before administering chloroform. Patient had "never taken chloroform before." Eighteen inhalations. She seemed to be suffering, judging from the facial expression. The coronal portion of the pulp was entirely removed by the fast rotating bur. Pulp bled profusely; dressed with eucolyptol. After hemorrhage ceased, a pellet of tin foil was burnished over the remaining portions of pulp and cavity filled with cement. Operation to be completed at another sitting. Patient reported "no pain," but knew all that was going on. When asked if she had been instructed not to eat before coming, replied, "nothing had been said to her about that. She had eaten breakfast as usual and a hearty lunch." This was about half-past one o'clock. On being questioned further, said, "She would not dread to have same operation performed on another tooth."

CASE 4.

Extracting roots covered by inflamed gums; 32 inhalations of chloroform. No pain.

CASE 5.

Grinding bell-shaped second molar; frail, delicate woman; heavy

grinding. Dentine very sensitive till fourteen inhalations of chloroform. Thence on no pain. Time, about 5 minutes.

CASE 6.

Tooth extraction by member of committee, who "meant to hurt" patient, but did not, "to amount to anything."

CASE 7.

OPERATION—PULP AMPUTATION.

Mr. ———, age thirty-seven; upper left cuspid cavity of decay in mesial surface. The four per cent cocaine solution applied to gum, rubber dam adjusted and chloroform administered. Pulp chamber entered with rapidly rotating engine bur. Pulp bled profusely; eucolyptol used as a dressing; tin foil burnished over the remaining pulp, and cavity filled with cement. Patient felt some pain; no nausea, headache or uncomfortable symptoms from the chloroform.

CASE 8.

OPERATION—EXTRACTION AND REPLANATION.

Miss ———, age twenty-five; superior right central incisor elongated quarter of an inch beyond the cutting edge of adjoining central and lateral. Impression of tooth taken with modeling compound extending well up over the root; gum thoroughly dried and cocaine solution applied to cleanse the parts of mucous deposits. Impression enlarged a little and the part above the gum line covered with cotton saturated with the compound cocaine pigment. Impression material placed in position again and pressed home, being held by lower teeth while taking twenty-six inhalations of chloroform.

Pulse before inhaling chloroform, one hundred and twenty beats per minute; at time of extraction, one hundred.

Tooth removed and bathed in eucolyptol; apical foramen enlarged; pulp removed; chamber and canal filled with chloroperchia. Socket deepened with engine bur, tooth replaced in position and driven up with hammer, bringing the cutting edge on a line with the left central. A splint was made of cotton, cement and sandarac varnish, holding both firmly in place. Patient was seen the following day; complained only of slight soreness. Time consumed from taking of impression, including the making and placing in position of splint, 12 minutes. Patient reported the operation painless.

Mention has been made in several cases of the time consumed in performing the operation and the number of inhalations of chloro-

form. This is done simply as a matter of interest. Dr. Hewett was not working against time—he was not aware that we were timing him, or counting the number of inhalations, but talked, chatted and explained, just as is done in any other clinic. The mentioning of the length of time consumed is valuable in that it shows what a saving can be gained over the ordinary method of operating, and dispels the idea many have, that when one administers chloroform, nausea and vomiting is present, and a great deal of time is consumed in caring for the patient.

Stating the number of inhalations is the only means we have of giving you an estimate of the amount of chloroform uesd. Not in a single case did a patient loose consciousness. At no time was a patient unable to lean forward and free the mouth of blood. Without exception the patients were ready to leave the operating chair as soon after the operation as in cases where chloroform is not used.

DR. HEWETT'S ATTITUDE IN RELATION TO CHLOROFORM.

In order that the committee may be correct in this matter, they make free to use the thoughts, and in some instances the language, of Dr. Hewett, as set forth in his paper, "Things Old, New and Useful," read before this society at the Davenport meeting in '93, and his lecture on "Anaesthesia, Local and General," delivered at the Iowa City meeting in '95, both of which are published in the transactions of this society for those years.

To more fully define my attitude in relation to chloroform as an obtundent (analgesic), I wish to say that in all the range of operative dentistry, and in the demands of oral surgery, there are but four to six operations demanding or justifying its exhibition to complete anaesthesia. The obtundent influence is ample. Under no circumstances is a dentist justified in fully anaesthetising a patient for extraction of teeth or for the minor operations of oral surgery. An incident occurred to the writer of this paper (Dr. Hewett) while he was a medical student, aged about twenty-two years, which made a profound impression. A right inferior molar became painful beyond endurance. Under the obtundent influence of chloroform he lanced the gums, as was then taught, and extracted his own tooth without pain. Since that time he has availed himself of its beneficence, with growing wonder at each recurring miracle. During a somewhat lengthened practice never an accident or an approach to one has occurred, so far as he knows, though used many thousand times.

As a result of careful study and extensive use, he does not hesitate to commend its general use, always as an obtundent. (Please observe the emphasis on that word.) When given as I (Dr. Hewett) shall describe, it is safe for the young and aged, the robust and the feeble, the sick and the healthy, the nervous and the stolid. Thus used as an alleviator of pain, however intense, chloroform has no known rival.

A substance in the hands of the unskilled and the reckless, as dangerous to human life as prussic acid or dynamite, but used properly, legitimately, as safe as the odor from the heart of a rose.

HOW ADMINISTERED.

Having tested almost numberless devices, from a sponge to an elaborate machine, I (Dr. Hewett) have chosen a means so simple as to be almost ridiculous. A wide-mouthed, half-ounce to ounce bottle. An ordinary morphine bottle is as good as any. Any glass bottle two and one-half inches high, an inch and one-half in diameter, with mouth three-fourths of an inch across, will do. Of course, it should be clean. If the chloroform is to be kept in the bottle after administration, the cork or stopper should be hermetical, and the bottle wrapped in dark paper, and kept in a dark place. The chloroform should be pure, never of a doubtful manufacture. No preparation of the patient is necessary, except that an empty stomach is to be preferred. Or if the drug is to be given soon after a meal, the food should be light in quality and quantity; otherwise, if the obtundent effect is pushed to, or near, the anaesthetic line, slight nausea may supervene—the only ill effect Dr. Hewett has obesrved even with the stomach overloaded.

Place not to exceed a teaspoonful of chloroform in the bottle. With it open, place it near one nostril of the patient, nearly on a level with the nose, remembering that the vapor of the chloroform is heavier than the atmosphere, and the narcotized air tends to fall. Compress the opposite nostril, direct the patient to take long, steady inhalations across the bottle's mouth. Do not tolerate spasmodic or jerky breathing. When an inhalation has occurred, remove the bottle so that nothing exhaled shall enter to contaminate the chloroform. At first the bottle should be distant enough for only the faintest odor to be detected. At no time near enough to irritate the fibrillae of nerves spread out upon the Schneiderian membrane, the throat and lungs.

Do not give perepheral nerves a shock. The medulla oblongata lies closely contiguous, and will respond to the irritation all too readily. Nerve impulse largely controls the sanguinous circulation. The blood readily absorbs the drug, and its globules roll over each other to the heart to be sent out to the brain, viscera and ganglia. Again, says Dr. Hewett, avoid shock—the first, more common cause of death from chloroform; steal over the perepheral sentinals so gradually, so warily, that they shall not fire an alarm to trigemina and medulla. As the long, regular breathing goes on, the bottle can be neared, till stronger vapor is taken. Presently the eyelids will begin to droop or "wink lazily," the muscles somewhat relax, and an obtundure, to coin a word, creeps over the nerves. In such a state Dr. Hewett extracted his own tooth, and in such a state operates for his patients.

In this condition the drill or bur can be carried to the live pulp, and the pulp be amputated, and afterward the patient will say, "I knew what you were doing, but it did not hurt." In the case of children they will sometimes moan and cry out, but after the restoration express no resentment, and all dread of subsequent operations is dispelled.

From what we saw and learned in Dr. Hewett's office, the committee make the following observations:

That Dr. A. C. Hewett, in his method of administering chloroform for surgical operations, is at variance with all known authorities in that—

First—His patients are not placed in the recumbent position.

Second—That he operates in the first stage when an obtundent effect is produced, rather than the stage of complete anaesthesia, and denies that shock is ever produced when chloroform is administered as he directs, from operating in the "obtundure" stage.

Third—That in thirty years' experience in his method of administering chloroform, for dental and minor surgical operations, no dangerous symptoms have ever been observed. Further, that we were gratified at the results produced.

That pain can be reduced to a minimum or be entirely overcome, and operation on teeth, other than extracting, can be performed in a quarter to a third the time ordinarily required.

That an operator can do a third to a half more work at the chair each day by using chloroform as described and save fifty per cent

nerve force that is ordinarily expended in quieting and encouraging patients.

Daily "we are amputating nerves, disemboweling them, causing groans, entreaties, tears, shock often to syncope, sometimes collapse."

We believe that it is as incumbent on dentists to perform operations painlessly as physicians, and that Dr. A. C. Hewett has made this possible.

That the average painstaking, intelligent dental practitioner, with proper instructions, can learn and use this method advantageously.

"It was from the discovery by Sir Humphrey Davy that the inhalation of nitrus oxide gas would relieve the pain of cutting a wisdom tooth, that the first notion of inducing anaesthesia by inhaled vapors took its rise. It was for the extraction of a tooth that Horace Wells gave to the notion its first practical embodiment. For a similar operation Morton succeeded in inducing insensibility by means of ether. The first operation performed in this country under the influence of ether was the extraction of a tooth." Who has a better right than the dental surgeon to use anaesthetics?

We believe that a chair of anaesthesia should be established in every dental school, in order that anaesthesia, both local and general, might be scientifically studied and taught. * * *

That the dental profession at large, as well as this society, owes a debt of gratitude and a vote of thanks to Dr. A. C. Hewett for making public his discovery.

That the Iowa State Dental Society is indebted to Dr. Hewett for papers and addresses on this subject on previous occasions, and especially for the hearty and hospitable manner in which he received the committee you sent to Chicago to make the investigation set forth in this report.

(Signed)

W. H. De Ford.
Geo. W. Miller.
L. K. Fullerton.

MY OWN CASE DETAILED AND THE "LETTER" DESCRIBING IT.

In July of last year (1900) I had the misfortune to have the third finger of my right hand crushed so that an amputation was impera-

tive. About an hour elapsed before I could get from our foundry to the office of the surgeon for the operation, and by that time pain had become intense and the wound very sensitive to touch. I had telephoned the surgeon to be in readiness to operate. On arrival I saw an array of instruments in and out of hot water that, had I been less accustomed to such sights, would have appalled me. I requested him to examine the wound carefully and remove all splints of bone that could else delay healing. He did so, but before he commenced I took sufficient chloroform to obtund the parts. During the preliminary work I experienced not the slightest pain, though his handling and turning of my hand before I took the analgic hurt me severely. The letter tells the rest. During the entire operation on my finger, which was so neatly performed, there was no pain; that I remember. When the steel jaws of his ligating forceps grasped the white, curiously wrought nerve of which he speaks, and drew it down from its sheath, a shiver of fear ran over me, and I presume I flinched, but I remember no pain.

Chicago, July 9, 1900.

Dr. A. C. Hewett, 491 Adams St., City:

My Dear Doctor—Replying to your request as to the result of chloroform administered by your method in your own case, for the relief of pain in amputating a crushed finger on your right hand:

It was necessary in this case to remove about one-half inch of the bone of the second phalanx of the ring finger, and to trim up the ragged soft tissues in order to make a neat covering for the end of the bone. After using my best efforts to render the bone aseptic, I was then ready to amputate the finger. Before beginning, you took a seat in a large arm-chair, in a reclining position, and, with about six drams of chloroform in a short, wide-mouthed bottle, you began to inhale same. In a course of about three minutes you told me to proceed (removing the bottle from your nostrils and holding your hand out over the table), and I did so at once, pushing the bruised, lacerated tissue back from the end of the bone; this being held there, the end of the bone was cut off with a pair of bone-forceps. I then trimmed up the soft tissues so as to make the flaps fit neatly, which you watched with a good deal of interest, and so far as I was able to detect without evincing any evidence of pain, save in one single instance, when I caught hold of the nerve on the ulnar side of the finger and snipped it off with a pair of scissors. One

ligature was necessary to be applied to control hemorrhage, and the wound was then ready for suturing. At this stage you again applied the chloroform to your nostrils and inhaled it for a couple of minutes more, after which you said, "Do your sewing." I then introduced four sutures, and if the piercing of the tissues with the needle caused you any pain there was no evidence of it that I could detect, and during the entire operation there was but an instant of time but that you could have answered intelligently any question put to you, and that was just before the introduction of the sutures.

If I had not been convinced before that chloroform can be given to a point where the sense of the nerve is obtunded to a degree sufficient to do minor surgery without patient losing consciousness, this experience on your own person would have been evidence sufficient to convince the most skeptical.

Trusting your wound will heal kindly, and that your hand may be useful for many years yet to come, I remain,

Sincerely your friend,

(Signed) W. A. TICHENOR.

If the contents of that letter are true, it means something. Gentlemen of the profession of surgery and medicine, it means something to you, and something more to your patients.

Knowing you as I do, not personally, but professionally, sympathizing with your trials, knowing how it pierces your hearts whenever a patient dies to whom you have administered an anaesthetic, I say, if what I have told you is true, it means much. I believe, as I believe anything, that if I were to have an arm or leg amputated or suffer any operation to be performed upon me, I could look upon it and take my own chloroform and not lose consciousness. That is exactly what I would do; I wouldn't allow any man to compeltely anaesthetize me. I believe any operation could be done without one particle of danger, and painlessly.

AN ERROR.

We were in error in publishing a notice of Dr. Waltz last month, in stating that he was to be Court dentist to Saxony. Dr. Waltz has gone to Europe to assist Dr. N. S. Jenkins, who is the Court dentist to Saxony. We congratulate him on his association with the eminent discoverer of Jenkins' porcelain enamel.

TOOTHSOME TOPICS.

BY R. B. TULLER, D. D. S.

Scene: Country dental office near where David Harum lived. Enter farmer with face badly swollen and tied up in a big red woolen comforter. Speech a little thick on account of thick lips.

"Shay, Doc, how much do yew git fer bullin' a dooth? Got a snag here thath gotter come eout. How butch fer yankin' the dod-ghasthed thig?"

"Fifty cents is my price for ordinary cases, but sometimes I have to charge a dollar."

"*Fifty ce'ts? Dollar?* Well, by dig! W'at, jist fer snatched eout a dooth? I ca't bay do such brice as dhath."

"Why, that is not too much. It is not enough. I ought to get a dollar, at least."

"A dollar, ha! By gravy! I've lots of tibes worked all day fer a dollar. Shay, you'g ban, you cub dowd off yer high horse! W'y, old Doc Dewcomb over to Bushville dote purte'd to charge bud twe'ty-five ce'ts."

"I cannot help what Dr. Newcomb does. I'm not extracting teeth for pleasure or pastime. It is worth half a dollar to clean up after, say nothing about the extracting, which is a surgical operation and nothing less."

"Surgical oberation! Git eout! Boy, you're head is gettig ed-larged. W'y, say, I dew yew w'en yew was a leetle runt with a leetle weezen face like yer Aunt Hester. Yankin' deeth a surgical oberation! Ho, ho, ho! ha, ha, ha! Say, if I cud git holt of the dub thig I cud bull it byself. (Tries and stirs things up.) O! Je-ru-sa-*lem!*"

"I'll let you take a pair of forceps if you want to pull it ourself. They will take hold all right."

"Yeth—thath all right, bud I ca't open by bouth berry buch."

"Well, that is the trouble I'd have, and more than that. It is worth a dollar. It is a complicated case and a bad case. You are in danger of blood poisoning every moment you neglect it. Probably I better lance it and try and save the tooth for you."

"Dot buch, Berry-Ann! Loo-a-here, Doc, yew ca't juggle do dollar eout o' me 'ith thad sord of dalk. I've got twe'ty-five ce'ts to give yew an' do bore. Gee whiz! but she's a-tunin' up."

"Guess you'll have to drive over to Bushville. It is only twelve miles through the cold, rain and mud."

"Well, by gingerbread! I will, 'fore I'll bay bore thad a quarter fer yankin' eout a dooth, you bet! And the dub thig is achin' to beat spots off a sku'k." (Starts out.)

"Here, come back; it might be your death driving twelve miles in this miserable weather in your condition. What are you thinking of? An hour more, and especially such a day as this, might cost you your life. You don't realize what a dangerous condition you are in. Your life is in danger, and yet you haggle about a few cents. Consulting my interests, I'd be glad to have you go to some one else, but it will be suicide on your part to go and criminal on my part to let you go. It is my business to take care of you, whether you have a cent or not. If you can't afford to pay what it is worth, I'll take the tooth out or do something to relieve you and make no charge. Come in, and I'll attend to you."

"All right, Doc, I' be good for two shillin' on this job and do bore. Dub the pesky thig! I wish you cud getter eout 'ithout hurtin'."

"Well, of course I could give you gas and take it out without hurting."

"Yew cud? By dig! I'm a good min' ter—say, doc, how buch do yew git whed yew give gas?"

"Two dollars."

"Two *what!* Say, thath is bore than I cad git fer ten sku'ks or cood skids—shoot an' skid 'em byself. Geewhittaker! Wow, but thath dub thig is a humpin' in dow. Ump, ump. Yew hain't got a leetle good whisky, hev yew, Doc? How lo'g does thad gas last, Doc?"

"O, not more than a minute or a minute and a half—plenty of time to get the tooth out."

"*Two dollars,* and it do't last longer'n thath! Yew do't really bean you git two dollars fer thath? By the eternal jumpin' Je-hos-e-phat! that thi'g is tunin' up. Holy sboke! I'll give yew fifty ce'ts, Doc, if yew dak'er eout with the gas. How long will it take to gitter?"

"About ten seconds."

"Well—by—gum! Say, yew deedn't give be two dollars wuth of gas. Give me ten seconds' wuth—and yew git the fifty ce'ts. Thath's five ce'ts a second. Thath's a good deal bore'n yer two-dollar rate fer a minute er a minute and a half. W'at I hate, Doc, is gittin' holt o' th' pesky thi'g. Yew can git a good holt fer fifty ce'ts' wuth and then I do't care a dab if it hurts a leetle on the last end. I ca't hep byself buch anyway if yew do't let-er slip. Ump! ump! Dab the thi'g! Ca't yew give me a leetle whisky, Doc? If yew kin gitter eout in ten seconds you're a dandy. The last time Doc Dewcomb ya'ked a dooth fer be he bulled be all 'round the roob."

"That was a twenty-five-cent pull."

"Say, by jockey! Doc, I ain't in do bood fer jokin'. I'm a-sufferin' like—all git eout. Gimme me fifty ce'ts' wuth of gas an' gitter eout quick."

"O, I'll take your tooth out for nothing if you don't want to take anything, but I can't give gas for less than two dollars."

"Sufferin' Moses! yew fellers git hold on a feller in my fix and jest hold him up. Yew git yer old tongs on thar an' gitter eout quick 'ithout gas an' yew'll git yer two shillin'. I'm tired of foolin'. Ump! Ump!"

"Never mind the two shillin'. Put your head back there and I'll have it out very quickly. I'm tired of fooling, too. Now hold steady—stea——"

"Wait! wait! Hol' on a minit! Gee! Say, Doc, I can't stan' it. Hain't yew got a leetle whisky in the shop? Can't yew git some? Ef I had a leetle good whisky er some old New Bedford rum an' merlasses I cud hav'er eout an' dever wi'k. Hain't yew got a leetle alcohol an' sugar? It's the dang'd gittin' holt thath makes be wither. Jest wait till I git by breath. Whew! Ump! ump! Thath's a—say, Doc, I'm a gittin' sick to by stubbick. Jest let be lay dowd on yer lou'ge. O lordy! lordy! I'be sick. I reckon yew'll hev to git me a leetle whisky. Thath's the stuff! I—I do wish Hadder Jade was here. I'm *so* sick. Bri'g a pail er somethi'g. O lordy!—I got a snack of crackers an' herrin' over to Hicks' grocery just 'fore I cub id—cost ten ce'ts. I bet a dollar I'be goid to throw er up—up-up—oop—oop—oooooooop. Ber-r-r-hgz! O lordy! I wish Hadder Jade-ade-up-oop—was here. Give me a drick of water.

"Got a leetle more whisky? Thath's the—O, the d'l! thath's cam-

fire. Well, I s'pose it's good fer be. I'm feelin' better already. By gum! Doc, I believe somethi'g busted in by bouth, an' it don't taste none like honey, either; but the dumb pain is gone. Gosh! it feels a lot better. By gravy! I kin kind o' git them teeth together an' the swellin' has gone down some. Couldn't bite like that when I cum in. By huckleberry! I don't believe I'll have to have the tooth eout now. Whew, but she tastes bad. Give me a leetle more of that camfire and I'll hol' it in my mouth a bit."

"You will have to have the tooth out now or have it treated and saved. It won't do to let it go as it is. It was badly abscessed and about ready to break when you came in. Your straining in vomiting caused it to break. It gives relief for the time being, but it will continue to trouble you if not attended to and you'll have that bad taste and breath. You see, I had to open all the windows, for the bad smell was enough to make a dog sick. It don't smell like a bunch of carnations here now. My advice is to have the tooth opened and treated. After several treatments it can be filled and made about as good as ever. O, yes, it will cost something. Treatment, two dollars, root filling three dollars and large amalgam filling one——"

"By the great horned snakes! Doc, what dew yew take me fer? I'm no Purpont Morgan ner Rockerfeller. *Six dollars fer one tooth?* Not on yer tin type! No, Jimmy Joslyn, I knowed yew when yew weren't knee high to a grasshopper. I knowed yer pap and yer mam. They never raised a boy that ken touch me fer six dollars fer one tooth. I'm feelin' bully now and I guess I'll leave 'er go now till some yuther time. She don't hurt a bit. If I conclude to hav'er eout and yew don't charge no moren't Doc Newcome, I'll pre-haps give yew the job. I'll let'er go till she kicks up ag'in—only I don't want her to swell up no more. Hanner Jane said I talked jist like a dum drunken man afore I left home, and she's kep' a gittin' worse. Hanner's got a snag that's a botherin' *her,* and mebby I'll fetch her down some day. She says it's loose and if she could git holt on it she cud pull it eout. I reckon mebby there's two on 'em. Yew don't think of chargin' a half dollar when they're loose, do yew, Doc? Well, I must be gittin' back hum. I'm much obleeged to yew fer the whisky—and the camfire. If I'd a had a good drink afore I cum in I wouldn't a-bucked, and I don't believe I'd lost my crackers and herrin'—and it was dum hard work eatin' 'em, too. But I want to

tell yew, Doc, that good old-fashioned New Bedford rum and black New Orleans merlasses wus something to smack yer lips over; but I reckon yew can't git it now-a-days. I ain't seen any on it fer years. 'Bout the time yew got to wearin' Nankeen pants ol' Major Harback kep' a tavern right on this spot—maybe you kin recollect—an' he used to keep New Bedford rum and merlasses that would make yew'r hair curl, an' on'y six cents a glass. So long, Doc, I'll bri'g Hanner in some day mebby. Well, good—say, Doc, if yew want ter buy any good fresh butter an' aigs I can bring yew in some; twenty-five cents a pound fer butter and the same fer a dozzen aigs—*spot cash.* Better let me sell you some?"

(To be continued.)

CLINICAL NOTES.

BY DR. EDWARD H. BOWNE, KINGSTON, N. J.

August 11 we removed from the mouth of Master R. W., of this village, the denuded roots of a temporary molar, which had formed a deep socket, or rather pocket, in the right cheek of the youngster. No doubt there will always be a scar at that point, internally in the mouth (cheek). We have extracted within three years the roots of an inferior molar from the mouth of a young woman, and the upper right superior molar of a man, each with running sores in the cheek, the disastrous results of retaining the teeth too long. Both of the parties have ugly scars externally on their cheeks.

We have seen clinically as horrible sore mouths and corrugated membranes, from "platinum and gold" plates, as from rubber—a fact—editor! and gentlemen of the dental profession!

In thirty-five years' continuous practice we never saw disastrous results from amalgam fillings—in any mouth that came under our observation, clinically or otherwise.

Remarks.—We treat all such lesions as perforations, etc., with glyconzone (Marchand), a powerful healing, antiseptic and detergent of great power, in conjunction with F. & E. witch hazel (Pond's extract), astringent and sedative; and Ex. Pinus canadensis, a powerful astringent and sedative to mucous membranes, etc. Use all externally, or by direct application, in the mouth, and always had satisfactory results with local treatment.

PYORRHOEA ALVEOLARIS.

BY DR. HENRI LETORD, ORLANDO, FLA.

Remembering the most intricate and intimate relationship existing in the body between organ and organ, tissue and tissue; and remembering how perfectly sound and healthy tissue may contract sickness through pure sympathy with other tissues; we cannot fail to recognize how very greatly a morbid process in one tissue or organ may be modified by conditions of disease in other tissues. I need not cite examples to remind you of how general bodily states of health and disease vary local disease. The proposition that a body tends to recover from sickness or injury quickly and perfectly, or slowly and imperfectly, just in proportion as the general constitution is healthy and robust or sickly and weak, is too well founded and too well proved to require further elaboration.

Let us inquire, then, somewhat into the question as to whether pyorrhea is a local manifestation of a constitutional disease. If it be a local manifestation, all our pyorrhea patients would have this disease: which is to say that if a constitutional disease, it is self-evident that wherever we found pyorrhea alveolaris we would find that disease, and then we should invariably find in pyorrhea patients a constant train of symptoms which, though varying within limits in individual cases, would be in the main alike and definite. As a matter of fact, do such patients present any such train of constant symptoms? Do all our pyorrhea patients have rheumatism? Do they all have consumption or syphillis, or any of the other diseases that have been blamed for pyorrhea? If there is any constitutional disease which they all do have, what is it? No one to my knowledge as yet has ever been able to point it out, and I doubt any one's ever being able to do so. To maintain that pyorrhea is a local manifestation of many diverse and different constitutional diseases is unreasonable and absurd. That all these general diseases, and every other disease that flesh is heir to, little and big, simple and complex, known and unknown, do exert a greater or lesser influence over the progress of the disease in question cannot be doubted; but to assign pyorrhea alveolaris as a symptom to any one of these diseases, or to any combination of them, is ridiculous on its very face. Then let us have done once and forever with all useless and senseless attempts to make pyorrhea out to be a local manifestation of a con-

stitutional disease and settle down to a belief that is reasonable and tenable; that pyorrhea is a local disease, however much it may be changed or modified by conditions of general health.

Having decided to consider pyorrhea a local disease, where are we to look for its cause? We, most of us, are in the habit of associating in our minds the cause of pyorrhea with deposits on the roots. Bacteriologists lately have endeavored to prove the cause microbic. That these searches for a specific germ have failed so far to find one is very strong proof to my mind that they never will find one; nevertheless, the searchers are entitled to the profoundest gratitude of the dental profession for their failure to find a specific microbe just as much as if they had found one, because it is of just as much value for the profession to know that the disease is not specifically microbic as it would be for it to know that it was, if it were. There are three points which stand prominently to the front in this disease which appear to me to be sufficient proof against the probability of pyorrhea's being microbic. They are: First, extraction always produces an immediate and complete cure. If the disease be microbic, how do you account for this? If bacteria can and do cause soreness and resorption of the alveolar process in the neighborhood of a tooth root, why can they not and why do they not continue to cause soreness and resorption after the removal of that tooth root? Second, the extreme slowness with which pyorrhea extends from one tooth to another. We have all seen cases where one or more single teeth in a mouth were affected for even years without involving the others. Pyorrhea stricken and healthy teeth exist side by side. Could we expect this if the disease were the result of the life and proliferation of a specific micro-organism? Third, the extreme variability in the clinical phenomena and progress of the disease. Our knowledge of specific diseases teaches us that such diseases have an exact course to run and that they are followed by an exact train of symptoms. What reason have we to believe a specific disease involving the teeth and gums would be any exception to this rule? None! Then this exception which does exist must be taken as strong evidence that the disease is not specific. I have not the time nor the ability to enter into a lengthy discussion as to whether pyorrhea alveolaris is or is not the result of a specific germ, but I am convinced by the foregoing observations that it is not.

The most important question of all at the present time is perhaps that of the relation of root deposits to the cause of pyorrhea. Some have said they were the cause and some have said they were the result of pyorrhea. Before we consider this question it behooves us to understand perfectly what we mean when speaking of deposits. The distinction between salivary and serumal deposits is well known and universally admitted. The difference is very marked and there is no excuse for ever confusing them. The salivary variety is found generally upon the lingual aspect of the lower incisors and upon the buccal aspect of the upper molars. It resembles, perhaps, more nearly than anything else mortar or common cement. It is coarse-grained, almost like sandstone sometimes, and is easily cut or broken. Its deposits always begin at the cervix and spread from there in any or all directions. The deposit most frequently creeps towards the occluding edge or surface of the crown very rapidly in comparison with its rate of progress towards the apex. I have seen, as you all have, the entire crowns of teeth so completely covered with salivary deposits that only the cusps could be seen. As it was hinted at above, these deposits make very slow progress rootwards, but as they do progress the gum tissue generally gives away before them, so that it becomes detached for about 1-32 of an inch ahead of the deposit. However, I have seen several cases in which the tartar had accumulated very rapidly during a spell of sickness in which the gum posterior to the lower incisors was covered a distance of a full eighth of an inch by an overlapping mass of salivary deposits, without there being the least disturbance of the attachment between tooth and gum. These salivary deposits are easily found, easily removed, and when removed the gum tissues quickly return to a normal condition. These deposits from the saliva are frequently the cause of loose teeth, which loose teeth sometimes have pus flowing from around them, and sometimes teeth are lost through excessive loosening from this cause; but that these deposits are never the cause of pyorrhea alveolaris I think is admitted and declared by all who have studied this disease. The loosening of the teeth from salivary deposits has a simple mechanical explanation and a simple mechanical cure. Pyorrhea is quite a different thing. Let us be agreed, then, that salivary calculi have nothing whatever to do, except as a modifying condition as any other morbid condition might be, with the cause of pyorrhea, and hereafter let us boast no more

of curing Mrs. Blank of a bad case of pyorrhea, when we have simply scaled off a mass of salivary tartar so as to give nature a chance.

But what about serumal deposits? We used to be taught that they were the cause of the disease, pyorrhea, but now the leading men of our profession are telling us that they are the result of the disease. These are extremely hard, fine-grained deposits varying in color from green to almost black. They are found on the root of a tooth and never (in contradistinction from salivary deposits) upon the crown. In other words, they are always found rootwards, or apically, from the original margin of attachment between the tooth and gum. It is a fact, established beyond any doubt, that these concretions are collections of the inorganic salts of the blood; but the question is, How came they into existence? Are they the cause or are they the result of pyorrhea? If we say they are the cause of the disease, we are at once brought face to face with the question: What, then, is the cause of the deposits? And if we say that they are the result of the disease, we are met by the equally perplexing question: What, then, is the cause of pyorrhea? It appears to me we have every reason to believe them the result of pyorrhea and no reason to believe them the cause. Given a chronic, or even a subacute, inflammation of the peridontal membrane with an accumulation of stagnant, extravasated blood serum between the cementum and the alveolar process—it matters not whether it be in the interstices of the pericementum or in a cavity formed by the disintegration of broken-down pericemental cells—and what, then, is more natural than to expect the inorganic salts of the stagnant serum to gravitate together and adhere in a tiny mass to the surface of the root? Starting with a diseased pericementum it becomes easy and logical to find a deposit of serumal salts upon the root, but I have never been able to find any reasonable process by which I could start with healthy tissues and get a deposit upon a root. Hence the conclusion seems clear to me that we must consider serumal deposits the result and not the cause of pyorrhea; because if we are given exactly such an inflammation as we have in pyorrhea we can reasonably account for the deposits, and without such an inflammation we cannot. The tiniest speck once adherent to the root would act as an irritant and cause a continual weeping out of serum, the salts of which would continue to augment the size of the speck

until the deposit and the pocket about it became large enough to open at the neck of the tooth, after which compression of the gums in eating, gravitation and kindred forces would keep the pocket fairly well emptied of serum so that increase in the size of the deposits would progress very slowly or come to a standstill entirely. Such pockets once formed, we might or might not have bacterial infection therein, which might or might not cause a flow of pus. In some cases of pyorrhea we have pus and in others we do not.

It is no argument against what I have written to say that I am obliged to presuppose the existence of a pericementitis before I can account for the beginning of a pyorrheal condition, for that is the very point I wish to bring out. I wish to make the point that pyorrhea begins in a pericementitis which becomes subacute or chronic and results in deposits of serumal calculi upon the tooth root, and that these calculi, in their turn, become the cause of a secondary chronic pericementitis which is simply a later stage of the disease, and that particular stage at which we commonly recognize it as our old enemy, pyorrhea alveolaris. You will perhaps say that well-authenticated cases have been reported where no deposits were to be found upon the roots, and you will perhaps ask me to account for my primary subacute or chronic pericementitis. These two points I wish to leave for a future consideration, as I fear I am spreading out too much as it is. I do not wish the general proposition that pyorrhea begins in a pericementitis, which results in serumal deposits, which deposits keep up and aggravate the original inflammation until we have the condition which we commonly understand as pyorrhea; I do not wish this proposition to be lost in a mass of details. The cause of the original pericementitis and the question whether or not the original cause may continue to act in conjunction with the initiating influence of the deposits, thus modifying and complicating the condition, are questions for future consideration.

A glance at the treatment and we are through. It is the opinion of the writer that in many cases, at the time they come to us for treatment, this primary pericementitis has ceased to operate; the cause of the cause has undergone a spontaneous cure. In these cases, thorough surgical treatment as outlined by Dr. Harlan and others will result in a cure; but in other cases this primary pericementitis is still working side by side with the deposits to keep up the disease, so that removal of the calculi, though of temporary benefit,

cannot permanently cure. These are the cases that are our despair. These are the ones that we labor over with the utmost carefulness and exactitude, with the hardest, the most back-breaking, nerve-racking, muscle-exhausting pains to accomplish—nothing. These are the cases that make our beloved profession appear to us in our dreams like some monstrous, multi-headed, eagle-clawed, sharp-toothed dragon pursuing us with its blood-foaming jaws. It is useless to consider the treatment of these cases until we have carefully considered the cause of the original inflammation, for that must be our point of attack. I hope to be able to consider that question in the no distant future.

The object of this paper has been: First, to draw the line between loosening of the teeth from salivary calculi, and pyorrhea; and, second, to state definitely the relationship between serumal deposits and pyorrhea to be as follows:

"Serumal deposits result from some primary pericementitis; they prolong and aggravate the original inflammation until it reaches the condition commonly known as pyorrhea alveolaris."—Extract Florida Society Papers, *Dental Hints.*

THE PRICE OF PLATINUM.

In 1822 platinum was worth $1,000 per pound; in 1870 $900, this slight decrease being due to the discovery of the Ural deposits in 1822. In 1895 the price per pound had risen to $2,700 and in December of last year to $4,800.

The above is from *The Dental Era* and is credited to the *Staatz zeitung.* At above quotation of $4,800 per pound the price per ounce would be $400, per dwt. $20, and per grain 83 1-3 cents.

The average set of platinum pin teeth contains 14 grains of platinum, which at 83 1-3 cents would be $11.66 2-3 for the platinum alone in a set of fourteen teeth.

The platinum in a continuous gum case weighing 20 dwts., or one ounce, would at above quotations cost $400. *Vas is los mein lieber frond Herr Doctor Prinz.*

Universal Exposition, St. Louis, 1904.

FOURTH INTERNATIONAL DENTAL CONGRESS.

August 29 to September 3, 1904.

Committee of Organization of Fourth Dental Congress—H. J. Burkhart, chairman; E. C. Kirk, secretary; R. H. Hofheinz, Wm. Carr, W. E. Boardman, V. E. Turner, J. Y. Crawford, M. F. Finley, J. W. David, Wm. Crenshaw, Don M. Gallie, G. V. I. Brown, A. H. Peck, J. D. Patterson, B. L. Thorpe.

The Department of Congresses of the Universal Exposition, St. Louis, 1904, has nominated the Committee of Organization of the Fourth International Dental Congress—to be held in August, 1904, in connectoin with the exposition—which was appointed by the National Dental Association, and has instructed the committee thus appointed to proceed with the work of organization of said Congress.

Pursuant to the instructions of the Director of Congresses of the Universal Exposition, 1904, the Committee of Organization presents for your consideration and information the subjoined outline of the plan of organization of the Dental Congress.

The Congress will be divided into two departments: Department A—Science (divided into four sections). Department B—Applied Science (divided into six sections).

DEPARTMENT A—SCIENCE.

I. Anatomy, Physiology, Histology, and Microscopy. Chairman, M. H. Cryer.

II. Etiology, Pathology, and Bacteriology. Chairman, R. H. Hofheinz.

III. Chemistry and Metallurgy. Chairman, J. D. Hodgen.

IV. Hygiene, Prophylaxis, Therapeutics, Materia Medica, and Electro-therapeutics. Chairman, A. H. Peck.

DEPARTMENT B—APPLIED SCIENCE.

V. Oral Surgery. Chairman, G. V. I. Brown.

VI. Orthodontia. Chairman, E. H. Angle.

VII. Operative Dentistry. Chairman, C. N. Johnson.

VIII. Prosthesis. Chairman, C. R. Turner.

IX. Education, Nomenclature, Literature, and History. Chairman, T. W. Brophy.

X. Legislation. Chairman, Wm. Carr.

COMMITTEES.

The following committees were appointed:

Finance—Chairman, C. S. Butler.

Program—Chairman, A. H. Peck.

Exhibits—Chairman, D. M. Gallie.

Transportation—(To be appointed.)

Reception—Chairman, B. Holly Smith.

Registration—Chairman, B. L. Thorpe.

Printing and Publication—Chairman, W. E. Boardman.

Conference with State and Local Dental Societies—Chairman, J. A. Libbey.

Dental Legislation—Chairman, Wm. Carr.

Auditing—(Committee of Organization.)

Invitation—Chairman, L. G. Noel.

Membership—Chairman, J. D. Patterson.

Educational Methods—Chairman, T. W. Brophy.

Oral Surgery—Chairman, G. V. I. Brown.

Prosthetic Dentistry—Chairman, C. R. Turner.

Local Committee of Arrangements—(To be appointed.)

Essays—(To be appointed.)

History of Dentistry—Chairman, Wm. H. Trueman.

Nomenclature—Chairman, S. W. Foster.

Promotion of Appointment of Dental Surgeons in the Armies and Navies of the World—Chairman, Wm. Donnally.

Care of the Teeth of the Poor—Chairman, Thomas Fillebrown.

Etiology, Pathology, and Bacteriology—Chairman, R. H. Hofheinz.

Prize Essays—Chairman, James Truman.

Oral Hygiene, Prophylaxis, Materia Medica, Therapeutics, and Electrotherapeutics—Chairman, A. H. Peck.

Operative Dentistry—Chairman, C. N. Johnson.

Resolutions—Chairman, J. Y. Crawford.

Clinics—Chairman, C. E. Bentley.

Nominations—(To be appointed.)

Local Reception Committee—(To be appointed.)

Ad interim—Chairman, G. V. I. Brown.

The officers of the Congress—president, vice-presidents, secretary, and treasurer—will be elected by the Congress-at-large at the time

of the meeting, and will be nominated for the several positions by the nominating committee.

The Fourth International Dental Congress, which will be held August 29 to September 3, inclusive, 1904, will be representative of the existing status of dentistry throughout the world. It is intended further that the Congress shall set forth the history and material progress of dentistry from its crude beginnings through its several developmental stages, up to its present condition as a scientific profession.

The International Dental Congress is but one of the large number of congresses to be held during the period of the Louisiana Purchase Exposition, and these in their entirety are intended to exhibit the intellectual progress of the world, as the Exposition will set forth the material progress which has taken place since the Columbian Exposition in 1893.

It is important that each member of the dental profession in America regard this effort to hold an International Dental Congress as a matter in which he has an individual interest, and one which he is under obligation to personally help toward a successful issue. The dental profession of America has not only its own professional record to maintain with a just pride, but, as it is called upon to act the part of host in a gathering of our colleagues from all parts of the world, it has to sustain the reputation of American hospitality as well.

The Committee of Organization appeals earnestly to each member of the profession to do his part in making the Congress a success. Later bulletins will be issued setting forth the personnel of the organization and other particulars, when the details have been more fully arranged.

H. J. BURKHART, *Chairman.*
E C. KIRK, *Secretary.*

Approved:

HOWARD J. ROGERS, *Director of Congresses.*
DAVID R. FRANCIS, *President of the Exposition.*

RECOGNITION OF THE D. D. S. DEGREE BY THE AMERICAN MEDICAL ASSOCIATION.

(By Eugene S. Talbot, D. D. S., M. D., Chicago.)

It will be of interest to the dental profession to know that the American Medical Association has recognized the degree of D. D. S. One object of establishment of the Section on Stomatology in the American Medical Association was to try to place dentistry on an equal standard with other specialties in medicine. The members of the Section have labored many years with this idea for a goal, and members of the association have been the warmest friends from the beginning.

The members of the Section have as their battle cry, "By their works ye shall know them," and for each meeting a program has been prepared far above that of the average dental society. Subjects have always been chosen of mutual interest to physicians and dentists, to the exclusion of dental technique, since there are many dental societies in which subjects pertaining to dentistry proper are discussed.

When the Section was first organized only those holding the M. D. degree could become members, but in June, 1887, Dr. N. S. Davis, Dr. W. W. Allport and I drew up the following:

"*Resolved,* That the regular graduates of such dental and oral schools and colleges as require of their students a standard of preliminary or general education and a term of professional study equal to the best class of the medical colleges of this country, and embrace in their curriculum all the fundamental branches of medicine, differing by substituting practical and clinical instruction in dental and oral medicine and surgery, be recognized as members of the regular profession of medicine, and be eligible to membership in this association on the same conditions and subject to the same regulations as other members."

While this practically recognized the D. D. S. degree, yet the wording of this resolution was so ambiguous that every year the officers of the Section had more or less trouble in admitting members. Thus at Denver, for some reason unknown to the writer, an edict was issued before the meeting that only M. D.'s could become members, and some thirty members were lost to the association. This

was unintentional, as it was admitted to have been a mistake by the secretary and treasurer after the meeting.

The section drifted along under the resolution until 1901, when a new constitution and by-laws were adopted which placed our Section at a greater disadvantage. In the meantime the Section by the character of its papers and discussions has placed itself upon an equal standard with other sections. Nay, more, it has in some respects far surpassed the other sections. It has been frequently cited in the past ten years as a model which other sections, to be successful, might copy, as witness the following remarks by President Billings at New Orleans: "One of the best conducted Sections of the association is that of Stomatology. Its efficient secretary has served continuously for sixteen years. This Section is threatened with annihilation since the plan for reorganization was adopted. This should be obviated by the adoption of the by-law proposed last year, which would enable the reputable dentists who have a degree of D. D. S. to become associate members of the association."

Noticing the predicament and recognizing the high standard of the work of the Section, the association came to the rescue and passed the following resolution through the House of Delegates:

Dental Members.—Dentists who hold the degree of D. D. S. from a reputable dental college, and who are members of a recognized local or state dental society, may be admitted as dental members on recommendation of the officers of the Section on Stomatology and approval by a majority vote of the Section, the names of such members to be sent to the secretary by the secretary of the Section.

By-law.—Dental members shall enjoy the same privileges as regular members and be subject to the same conditions.

It will be seen that not only is the graduate of dentistry placed on an equal standard with the graduate of medicine, but the association has granted the Section on Stomatology great privileges as well. It has given it its own autonomy. This relieves the officers of the general body as well as those of the section of some of the annoyance which naturally occurred under the old regime. The D. D. S. pays his $5.00 membership fee and receives the weekly journal of the association, which every practitioner of dentistry or medicine should take.

It has been claimed by some dentists that the medical profession has been hostile to dentistry. While it is possible that such may

be the case in certain localities and individuals, it is not true of the members of the American Medical Association. When the section was established at Richmond, Virginia, in 1881, Drs. Samuel D. Gross of Philadelphia, Sayre of New York, N. S. Davis of Chicago and Toner of Washington were heartily in sympathy with the movement and took an active interest in its welfare from the start. Later Dr. Marcy of Boston not only worked for its interest, but read papers before the section. It is a well-known fact that these men are all ex-presidents of the association. The dental profession has no better champions than the present temporary and permanent officers of the association. The secretaries from the start have always stood by the section. Dr. Simmons, the present permanent secretary, has championed our cause throughout the present trouble. He is a warm friend of the section and always speaks in the highest terms of our work.

I think it safe to say there is not a member in the association who would not gladly read a paper before our section upon invitation, and we have had many such papers in the past. There has never been the slightest distinction made between the sections, and ours has as much influence as any other.

It has been the aim of the section to elevate the standard of dental education, and its influence has been felt in universities, in the advancement of their years of study, preliminary education, ground work in medical principles, in the passing of the army medical bill and the establishment of the Army Dental Corps.

Our numbers have not been large as compared with other national bodies. As compared with other sections in the national body, with the exception of possibly three, we stand very favorably. There is one great advantage, however, in that when one reads a paper upon any subject before the Section on Stomatology he is sure of an appreciative audience. Every person in the room is capable of discussing the paper to the fullest extent.—*Digest.*

OBSERVATIONS ON RACIAL DECAY.

That Froude was not accurate when he said that political economy had been "banished to the exterior planets," every one will fain admit. Such a science there must be; but I am here concerned to impugn neither Free Trade nor Protection, but Ignorance, as the underlying cause of the present degeneration of the physique of our people. This ignorance resides, generally speaking, in our lowest and our ruling classes.

First, then, to demonstrate the fact of racial decay. If we take the Registrar General's report for last year it is found that the birth-rate of London, to take an example, was 30 per 1,000, the lowest ever recorded, and 0.5 below the figure for the preceding year. To be brief and general, the birth rate and the death rate are falling in all civilized countries. Obviously there must be volumes to be written on this last sentence as a thesis, but here and now I want merely to observe that the birth rate is falling; and I would further ask the reader to take my word for it that, though this may follow in part the deliberate and purposive intention of the race, it is also attributable in part to the physical decay which is only too amply demonstrated by other means.

Seeing, then, that proportionately fewer children are born, what of their destiny? They are heirs of the legacy beqeathed to the mammalia by "aeonian evolution." The mammalian mother suckles her young. There is no space here to discuss the significance of this sublime method, nor to vindicate the use of that adjective. Suffice it that there, assuredly there, is the germ of ethics, of altruism, and of that charity which never faileth. There, also, is the only safe method by which the nursling shall become a man. Daily, in the more "advanced" nations of the earth, that method is obsolescent. Many reasons there are; among others the fact that the mother of the poorest classes is herself—poor creature—unfit for so high an exercise of the maternal function. But what is the consequence? Observe the vital statistics of the next few weeks. Observe how the infants die like flies in our great towns. Last year about one child in seven of this imperial race died in the first year of life, and the records of Berlin corroborate what is common experience in this country, and what Paris is now making desperate efforts to rectify; that the death rate among artificially fed children—children, that is, fed on septic milk, in which microbes are multiplying under the

grateful warmth of a summer sun—is thirty times as high as among naturally fed children. The infantile mortality in this country was higher last year than in 1833, while the general mortality was 21 per cent lower. "Acute milk poisoning" is a common phrase in American advertisements. I wonder how many readers ever heard of it, and how many more are inclined to question its accuracy.

But what of the survivors? Many die in the second and third years from various maladies to which the great tribulation of their earlier months has made them susceptible. Let us consider the comparatively small fraction of all the children born who reach the school-going age. By this I do not mean, of course, the age at which children are sent to school, but the age at which they should be. There is a difference of a lustrum. Now, it has recently been shown that the children in the board schools of our great towns are very far from physical perfection. In Scotland a commission has been considering physical training, and has recommended the need for it; pity 'tis that the cure is not so easy as athleticism thinks. Meanwhile the fact has been discovered that 70 per cent of Edinburgh school children suffer from more or less physical deficiency. Let me correlate with this a fact which I believe to be closely connected therewith. In Aberdeen the school children are bad enough, but much superior to those of Edinburgh. Now, the use of oatmeal porridge—that admirable and uninteresting food—is declining far more rapidly in Edinburgh than in Aberdeen, so far as may be judged from the inquiry carried on in the poorer quarters of Edinburgh by some of the feminine medical students in that city. To save space, let me say at once that the general record of the schools of our great towns is similar, notably in the case of London.

Finally, let us take the records of the army. These tally with those from other sources. More recruits are rejected, proportionately, each year, so that an absurdly worded regulation has recently been issued whereby all fixed standards of height and weight and chest measurement are practically abolished, and the examining medical officer may pass the applicant if he is satisfied that his defects are due to "imperfect nutrition" rather than to "constitutional taint." "Taint" began its exodus from medical literature thirty years ago, and is now obsolete. I suppose it conveys some substitute for an idea. Why was this change necessary, and why is its wording so vague and amorphous? Simply to meet the exigencies of the case.

The men were yearly being turned away in larger proportions. They show worse teeth to the examiner almost daily; the ratio between 1901 and 1900 is simply appalling. It is perhaps not universally known that the embryonic cells which will form the adult teeth are present in the baby, and that their health is at the mercy of the educational methods which insist on a girl's familiarity with our absurd coinage system or the birth rate of some illiterate king, but omit to tell her that it is criminal to feed a baby on "anything that's going."

And so we come to causation. We may call it toxaemia or blood-poisoning. And what are the poisons that are daily in greater quantity introduced into the blood of our race? They are bad air, septic milk, alcohol (consumed by the women—the mothers—of this country in threefold the quantity of twenty-five years ago), tobacco, and many more. Obviously each of these needs an article to itself. These are positive evils. There are many negative. Our statesmen talk about corn. I wonder how many of them know and teach that white bread is embodied ignorance, and that its nutritive qualities are far inferior to those of brown bread; that only a few invalids are even economically justified in eating it; and that the taste for it as compared with brown bread is acquired and artificial. But study of the simple structure of a wheat-grain, with its valuable salt-containing husk, its outer brown and its inner white components—each with its own value as a food—is not compulsory, methinks, in the Etonian curriculum. I have been hammering in other places for months at this national question, which reached the Lower House last week and the Upper House this week; but why, under the heading of Science, which looks forward to a universal Society of Friends, do I here concern myself with the people merely of what Carlyle called "this remarkable island"? Certainly not that the national feeling, as such, is not an ancestral relic which, with its hideous consequences, is utterly abominable at this hour alike to science and to religion. But rather that the most earnest and searching desire to extirpate one's prejudices cannot disturb the belief that Britain is the first factor at this hour in the evolutionary process which is to make less sorrowful what Wordsworth called "the unintelligible world"; nor the assurance that Mr. William Watson was right when he said—

"And God the poorer for her overthrow."

—C. W. Saleeby, in London Academy.

UNIQUE ADVERTISING

In many country towns and small cities a man in almost any occupation is looked upon as "agin" the interests of the place unless he advertises in the local paper, or official organ it might be termed, that may be published in his locality. Many dentists thus, through a feeling of reciprocity, are inclined to patronize the home paper and therefore place an "ad" that they had rather keep out.

In larger places, where there are a number of dentists, there is generally the dental-parlor fake who spreads ink in the most extravagant manner about his wares, his wonderful ability and his exceeding low prices, not to mention the pictures of false teeth, bridges, crowns, some forceps, etc.

It is a natural sort of a proposition that the newspapers support the men who patronize them.

An ethical dentist at Altoona, Pa., has a unique way of giving his support to the paper and yet not violating his code. Other ethical dentists may get a suggestion from the "ad" we publish below. Many people after reading such a satire would feel ashamed to be seen going to cheap parlors. It could, of course, be greatly shortened and yet be as effective, but its length, after all, is a part of the satire:

TEETH TEETH TEETH

NEW YORK AND CHICAGO

Limited

DENTAL ASSOCIATION!

THE TWENTIETH CENTURY DENTISTS have organized the above association for the "LIMITED EXPRESS" purpose of catering to the wants and dental requirements of all individuals who don't give a rubber dam how dental work is done, or by whom; just so the price is inconsistent with good material and skillful service. The Manager in Charge, Engineer, Conductor and Brakeman are all fullfledged graduates of the most renowned Dental Colleges of the Old and New World (the Philippine Islands included) and are the only lineal descendants in the direct "Mail" line of such emi-

nent scientists as "Herodotus," 484 B. C., and others—from which time through all the dim vista of past generations, our Association and identity have been kept intact. From the ruins of Pompeii and the Pyramids of Egypt relics of our ancestral skill and ingenuity have, from time to time, been recovered, which, from a historical standpoint, establish beyond contradiction our rights and claims to Professional Antiquity. Our superiority thus established over the more recent and modern productions of later day teachings enable us to DO YOU a greater service for less real cash, which we extract, by your paying, without pain, Free of Charge "Dental Catarphoresis" an unsuccessful and abandoned experiment, has by us been supplanted by Hypnotic Power and INFLUENCE which enables us to perform all operations not only painless, but without your personal, mental or physical knowledge. The horror of the Dental chair is but a dream.

Being the original and sole owners of large Gold Mines in Klondike Region and also a silver mine in Nevada, enables us to PRODUCE work requiring such materials below ACTUAL COST and the absolute purity of the metals is fully guaranteed by a U. S. Mint Assayist, and because of such advantage of our competitors, who make what are commonly known as "Hollow or Shell Crowns," ours are absolutely solid, cast in moulds from the original ingot metal. In addition to Gold Crown and Bridge work we are prepared to introduce the very latest Spring Style (direct from Paris) of Window Crowns, including Bay Window Crowns, the Oval, Square or Octagon Style, with Beveled Edge French Plate or American Glass Fronts, as preferred by the patient.

In order to avoid the rush incidental to such unprecedented demand made upon our valuable time, we take all impressions of the mouth in infancy prior to the eruption of the first set or deciduous teeth, models of which are made and stored away in large and commodious vaults provided for that purpose. Being thus prepared years in advance the patient is not required to call for a second impression, but can order TEETH by mail, 'phone or wire, and to avoid additional delay we have purchased the very latest thing out in the form of an "Automobile Delivery Wagon" with a guaranteed speed of 150 miles per hour. The various well known impression materials, Plaster, Impression Compound and Wax, have been abandoned and impressions are taken only with the original clay or mud,

imported direct by us from the garden of Eden. None genuine without the signature of Adam and Eve being accepted, this precaution being taken to prevent adulteration or substitution of worthless material.

ARTIFICIAL TEETH

Are Guaranteed to approximate more closely the natural organs than those used by any other Dentist, as immediately after the battle of San Juan, Santiago, and the destruction of the Spanish fleet our representatives were upon the scene and procured all the available teeth to be found in the mouths of dead Spaniards, and to those contemplating going abroad this will prove a decided advantage, inasmuch as Spanish and other foreign languages can be spoken most fluently. When preferred all our Teeth will be furnished with the latest improved Morgan & Wright Rubber Tires or Rims with single or double tubing, fully inflated, thus enabling the patient to talk continuously without danger of LOSING WIND or becoming deflated—a decided advantage to step mothers, old maids or widows. Because of the fact that guarantees for a limited number of years are rendered void in the event of the Manager going to——— —, we have decided to guarantee all operations and work from the birth of Adam to Eternity. Beyond this our future address may be obtained from "St. Peter at the Gate."

DON'T FAIL TO COME TO OUR GRAND OPENING.

Spanish, Filipino and the Chinese Languages spoken, with a large retinue of Chinese servants and a French Butler in constant attendance. ICE CREAM and CAKE will be served by them FREE OF CHARGE daily from 9 a. m. to 9 p. m. To those more bibulously inclined "Mum's Extra Dry" will be served free by the French Butler, in addition to an elaborate Menu of Limburger Cheese, Spanish Pickled Mackerel and Holland Herring.

BABIES WILL BE VACCINATED FREE ON BARGAIN DAYS

And a competent guide furnished free to conduct all Out-of-Town patrons through Altoona's new U. S. Federal or Public Building.

Be on the lookout for notice of "Mill End Sale" of Job Lots of Teeth, Fillings, Etc.

For the sole accommodation of those who are ashamed to be seen visiting our establishment in daylight, we have decided to keep open

evenings from 6 to 10 o'clock. Most of our business is done at night.

A pair of verdant farmers, who had just disposed of their products at the City Market a few days since and whose pockets were somewhat inflated by the ready cash thus obtained were overheard discussing the possibilities of the future, whereupon the most youthful of the two, with a liberal litter of HAYSEED, fresh from the rural district, still clinging to his anatomy, being impressed with the future possibilities of the environments of a city life, immediately decided to invest his cash on hand in a Dental Outfit and to establish one of those new fangled ASSOCIATIONS, as a most promising field for remuneration and the development of latent powers, and, cheerfully bidding adieu to the companion of his youth, he immediately launched his bark upon the sea of professional life as Dr. Perkins, of Punkinville, Manager in Charge.

This Advertisement is All a Fake.

Who of you that have pursued it ever saw or read an advertisement in print by such eminent professional gentlemen of the Medical profession as Pancoast, Agnew, Garreston, or Pepper, or of the Dental as Atkinson, Kingsley, Kingsbury, Wott, Darby, Jack or Pierce and others? Nay, not one! Professional men of learning, recognized ability and talent are not obliged to resort to advertising schemes to secure patronage. His services are sought and ability recognized by the educated and refined element, who are always prepared and willing to compensate him for what he really is and not what he pretends to be.

"YOU CANNOT MAKE A SILK PURSE OUT OF A SOW'S EAR."

Neither should you expect, or can you get, SOMETHING for NOTHING—a set of Teeth advertised for $5.00 or $6.00 may be worth that amount, certainly NOT MORE.

Dentists, as a rule, are NOT IN the business for their health. THE BEST IS NOT TOO GOOD, and professional fees are usually regulated by the character of the service and ability of the operator; a Skilled Blacksmith commands higher wages than an inferior helper.

GOLD TOOTH CROWNS in their place (on the posterior teeth) are all right; out of their place (on the front teeth) are all

wrong, extremely unsightly, in bad taste, and a characteristic "fad" among the inferior ladies of the colored race. Servants and third rate actresses, and one of the attractive features of last year's CARNIVAL MONKEY "Esaw."

Self-styled "Painless dentists," with their stereotyped copied ads, are ofttimes a delusion and a snare, and like the advertising Charlatans in other professions should be ostracized.

CATTELL BANQUET.

A number of professional friends of Dr. D. M. Cattell, Chicago, gave a banquet in his honor on August 26th. Dr. Cattell leaves Chicago to take the position of clinical professor of operative dentistry and professor of operative technique in the dental department of Vanderbilt University, Nashville, Tenn. The dinner was an enjoyable affair and all who were there expressed their regrets at the loss of Dr. Cattell from the professional circle of Chicago. He has been a faithful and honored member of the dental profession for twenty-five years. He has been an active member in the dental societies, ever ready and willing to do his part for the advancement of dentistry in the West. Dr. Cattell has been in the teaching corps of the three leading schools in Chicago; he has been a recognized teacher in operative technique ever since the introduction of that subject into the dental college curriculum, and it is to be regretted that Chicago has to lose such a valuable man from the professional ranks, both as a teacher and a society worker. The institution that Dr. Cattell has connected himself with has reason to be proud of, and thankful for, the addition of such a man to their faculty.

Many interesting and pleasing little stories were told about Dr. Cattell and his professional career in Chicago. Dr. E. J. Perry acted as toastmaster and filled that position in his admirable and unique way. It was regretted by all that so many members of the profession were out of the city on vacations, but every one wishes him a successful and pleasant career in his new home.

A FAULT OF OMISSION.

The Pacific Dental Journal complains that some of their articles have been published by the AMERICAN DENTAL JOURNAL without the customary credit being given. The articles in question were taken from the published proceedings of the California State Dental Association, and as there was nothing to show that the proceedings had been previously published, the error was natural. The AMERICAN DENTAL JOURNAL, however, will hope for pardon, and will promise to be good.

OBITUARY

DR. W. C. BARRETT.

Dr. William Cary Barrett died of heart disease on August 22nd, in Nauheim, Germany. Dr. Barrett was born May 13, 1834, in Monroe County, New York. After obtaining an academic education at Kingsville Academy, Ohio, he attended Carey Seminary. He was also a student at Yates Academy, New York. After completing his education at the latter institution he took up the profession of teaching, which he followed in several literary institutions in the state of New York. From 1863 to 1864 he was a student in medicine, but later took up dentistry and in 1869 he received the degree of M. D. S. After his graduation in dentistry he located in Wyoming County, New York, in the village of Warsaw. He practiced his profession in this place until 1876, and then removed to Buffalo, New York, where he continued the practice of dentistry. In 1877 he again took up the study of medicine, and in 1880 he received the degree of M. D. from the medical department of the University of Buffalo. The following year he attended the Pennsylvania College of Dental Surgery, from which institution he received the degree of Doctor of Dental Surgery. He then returned to his practice in the city of Buffalo, and in 1885 he was made lecturer of oral pathology in the medical department, University of Buffalo. In 1890 he was given the full professorship of that chair, a position that he retained up to his death. In 1889 he was made professor of morbid anatomy and pathology in the Chicago College of Dental Surgery, a position that he retained up to his death. In 1891 the University of Buffalo organized its dental department and Dr. Barrett was made dean of that institution. He was also made professor of the principals and practice of dentistry and oral pathology. He was also a member of the staff of the Buffalo General Hospital, holding the chair of oral surgery. From 1882 to 1888 he edited the Independent Practitioner. In 1888 he retired from the editorship of that journal, and in 1891 he took the editorship of the Dental

Practitioner of Buffalo, a position that he held at the time of his death.

Dr. Barrett made some valuable collections in comparative dental anatomy, a subject that he showed great familiarity with.

Dr. Barrett was a member of the Erie County Medical Society, Buffalo, and Medical Association; was also a member of the American Medical Association. When the International Medical Congress met in London in 1881 he was an active member. When the International Medical Congress met in Washington in 1887, Dr. Barrett was made honorary member of the Congress. He was also a member of the International Medical Congress in 1891, when it met in Berlin. He was elected president of the Dental Society of the State of New York in 1875, and was also president of the American Dental Association in 1886. He was a member of the American Microscopical Society, an honorary member of many state societies. He was also a member of Foreign Professional Societies.

Dr. Barrett had been a constant contributor to dental literature for a great many years. He had also been an active member of the National Dental Association and the National College Faculties Association. He had been ever active in the cause of advanced dental education and had served for a number of years on the foreign relations committee of the National Dental Association. Dr. Barrett had nigh professional ideals and his familiar figure will be missed from the societies, and he leaves many friends to mourn his loss. His many professional friends in Chicago and the West will miss his annual visits. He was a man of genial spirit and kindly disposition.

DR. LEWIS H. LAWTON.

Dr. Lewis H. Lawton, one of the veteran dentists of St. Paul, Minn., died August 21st. He had been a resident of St. Paul since 1885 and was 64 years old.

Dr. Lawton's illness dates back to injuries received in a steamboat explosion on the Snake river in Washington state ten years since. His wife and children, Lewis H. Lawton, Jr., of San Francisco; Dr. John R. Lawton, a partner with his father, and Harry C. Lawton, a student at the Minnesota State University, survive him.

DR. BLASDELL'S BRAVE DEATH.

The tragic death of Dr. James H. Blasdell, a dentist, of Brooklyn, who was drowned while bathing at Deal Beach, N. J., has been a terrible shock to the relatives of the deceased and a wide circle of friends. At the time of the fatal accident Dr. Blasdell was bathing, with Miss Magdalene Harris of Brooklyn and Miss Kelly of Deal Beach. Dr. Blasdell had only been at the resort a short time when the accident occurred. They had been in the water but a few mintance from the shore.

Miss Kelly, who could not swim, suddenly sank in a deep place between the shore and the sand bar. Dr. Blasdell went to her assistance, and life guards who saw the peril threw a life preserver to the trio. Miss Harris secured it and managed to reach a place of safety, but Dr. Blasdell was still struggling with Miss Kelly when the rescuers reached them. The guard managed to reach the young woman, but the doctor, unable to hold out any longer, sank in the deep pool. The body was quickly recovered.

Members of the family were prostrated with grief.

DR. G. W. WERTZ.

Dr. G. W. Wertz died August 10 after an illness of but short duration. The doctor had been a resident of Omaha since 1878, having moved there from Kansas City. He was born in New Castle, Pa., fifty-eight years ago and lived in that city until he had completed his education, at which time he came west, locating first in Kansas City, where he remained but a short time, going to Omaha, where he had been in continual practice until his last sickness came upon him.

Dr. Wertz was an active member of the Nebraska State Dental Association and was for many years a member of the National Dental Association. He was also a Scottish Rite Mason and a member of Woodmen of the World.

Deceased leaves a widow and one son, and a host of friends to mourn his loss. His son, G. D. Wertz, is a resident of Kansas City, where he enjoys a thriving practice in the dental profession.

DR. CLARK S. CADY.

Dr. Clark S. Cady died August 17 at Holley, N. Y.

Dr. Cady was born in Yates, January 10, 1837. In June, 1857, he was married to Miss Atlanta Barrett, daughter of Rev. William Barrett, of the Genesee Conference. For a time he lived in Warsaw, but finally removed to Dayton, O., where Mrs. Cady died in 1869. In October, 1871, he was again married to Miss Susan M. Wilsea, daughter of Warner Wilsea, of Kendall, N. Y., who survives him.

A year after his marriage he came to Holley and purchased a farm a half mile west of the village, at the same time opening a dental office in the village. After a few years he sold his farm, and the home on Main street was built where he had since resided. In 1891, in company with Dr. Buck, he opened a dental office in Rochester. After a year the partnership was dissolved, and Dr. Cary assumed entire control and conducted the business personally up to the time of his illness a year ago, when he disposed of his office and business and had since been confined at home.

Beside his wife he is survived by four children, two sons by his first wife and two daughters by his second wife—Dr. E. Everett Cady, of Brooklyn, and Dr. Frank W. Cady, of Albany; Mrs. Grace Requa Hurd and Miss Amy Wilsea Cady, of Holley. Two brothers also are left—Dr. Almond Cady and Dr. Govenor Cady, of Chicago.

DR. ARCHIE BOALES.

Dr. Archie Boales of Cleveland, O., died at Hopkinsville, Ky., August 9th. Dr. Boales, who was thirty-three years old, had practiced in Cleveland for about seven years, and had acquired an honorable standing in his profession.

For the past year and a half Dr. Boales had been suffering from serious throat trouble, and ten days ago he left Cleveland to go to his old home in Kentucky. He felt that the end was near, and experienced a natural longing to pass the last few days of his life amid the scenes of his youth. He failed rapidly after his arrival in Hopkinsville.

DR. RALPH R. BRAXTAN.

Dr. Ralph R. Braxtan died at his home in Ripley, Oklahoma, of appendicitis, August 9. Dr. Braxton was a graduate of the Ohio College of Dental Surgery, class of '88-89, receiving the highest honors both years.

DR. WILLIAM C. HENSLEY.

Dr. William C. Hensley, for the past eight years a dentist at Kansas City, died July 23 from the effects of exposure during the late floods in the Kaw River valley. In fact, the true account of Dr. Hensley's heroic acts in saving human life during the flood will probably never be known. He is said to have been one of the first ones out in the flooded districts, going from house to house, warning families and helping women and children to reach places of safety. He was untiring in his efforts, rushing on through the gradually rising waters until he had to take to a hastily built raft. On this, it is said, he worked for hours, and how many lives he rescued will probably never be known. He was unmarried, but leaves a mother and brothers and sisters in Butte.

Dr. Hensley was 33 years old, the last eight of which he spent in the East in study and practice of his chosen profession. He not only held a high place as a dentist in Kansas City, where he established an office upon leaving college, but had drawn attention to himself as a surgeon. Since the flood it is said he never recovered his former strength and vitality, and about two weeks ago he was taken down with a high fever, said to have been malignant typhoid, by which he came to his death. His mother, Mrs. L. J. Hensley, was called to his bedside from Butte as soon as the symptoms became serious.

DR. HENRY GARRETT.

Dr. Henry Garrett, one of the oldest and best-known dentists in that city, died at Wilmington, Del., August 20, after a long illness. Dr. Garrett was born in Wilmington on November 22, 1824. He was a member of the Society of Friends, and a leader in his profession of dentistry.

Mrs. Garrett died about three years ago, and Dr. Garrett is survived by the following grown children: Mrs. Mary Garrett, wife of Howard Garrett; Charles C. Garrett of Baltimore, Thomas Garrett of New York, Dr. Henry Garrett, Jr., Dr. William R. Garrett and Arthur H. G. Garrett of this city, and Mrs. Kate Darlington, wife of Dr. Darlington of Delaware County, Pa.

DR. FRANK R. WRIGHT.

On August 17th occurred the death of Dr. Frank R. Wright at Wappello, Iowa. Dr. Wright was born in Morning Sun, Iowa, in 1867. He was a graduate of Northern Indiana Normal School, State University of Iowa, American College of Dental Surgery. Deceased leaves a wife and two children.

DR. GUSTAV J. DOEHRINGER.

Dr. Gustav J. Doehringer of Kansas City, Mo., died August 12th of typhoid fever. He had been in the hospital for three weeks. The body was moved to St. Mary's, Kan., his former home, for interment.

PERSONAL AND GENERAL

Dr. Burt Sawyer has opened an office in Garretson, S. D.

Dr. Bert Bell of Minto, N. D., will open an office at Grafton.

Dr. V. R. McCue, formerly of Gallatin, has located in Pattonburg, Mo.

ANN ARBOR DENTISTS ROBBED.

Thieves climbed over the transom and robbed the office of Dr. Al Wilson and Dr. F. Palmer.

Dr. A. K. Simmons, formerly of St. Paul, is now located in Red Wing, Minn.

Dr. J. Stroch, formerly of Fremont, Ind., killed himself in Cincinnati Aug. 8.

Dr. J. B. Dowdigan, who has conducted a dental business in Owosso, Mich., for ten years, has sold out to Dr. Gaylord Finch, and will go west.

Dr. C. Howard Merritt of Auburn, Maine, has sold his office to Dr. M. B. Smiley of Patten and Dr. Chas. L. Woodworth of Baltimore. Dr. Merritt will locate in Oakland, Cal.

GOOD LOCATION

The Victoria, Ill., correspondent for the Galesburg Register declares that the former place would be a good location for a dentist.

DR. C. W. HAMILTON.

Dr. C. Will Hamilton of Ithaca, Mich., dropped dead while working at his chair Aug. 30. The cause of death was apoplexy. He leaves a widow and one son.

Dr. Baldwin of Peoria, Ill., lost $50 worth of gold through thieves Aug. 30.

Burglars entered the office of Drs. Willett & Stevens at Pekin, Ill., Aug. 30 and stole $50 worth of gold.

Dr. Anna A. Barron of Goshen, Ind., has located in Mishawaka, succeeding Dr. F. H. Irwin.

Dr. A. N. Davis of Dayton, Ohio, but who has been practicing in Chicago, has accepted a position as assistant to Dr. Sylvester, dentist to the Emperor, at Berlin, Germany.

The office of Dr. Edward Kuper, a dentist of Maplewood, Mo., was broken into Aug. 29 and a gold watch and a quantity of gold taken.

UNIVERSITY OF MARYLAND.

Work on the new building for the university has begun and will be ready for occupany by the time for opening of the college.

INSANE FROM N. O. GAS.

Louisville, Ky., Aug. 14.—"Laughing" gas, applied in order to facilitate the extraction of a tooth, is said to have been responsible for the mania of

Henry Wilken, who was adjudged insane in the county court to-day. He was 25 years of age.

About two weeks ago Wilken went to a local dentist and had a tooth pulled. He was given gas and shortly afterward developed symptoms of mania.—*Chicago Chronicle.*

SENSIBLE WORK IN STRASSBURG.

Since last October the children in the public schools of Strassburg have had a chance to have their teeth taken care of free, the city paying the dentists. Among 10,661 children, only 165, less than 2 per cent, were found to have sound teeth.

MARRIED.

Dr. James Martin Hannahs to Miss Blanch Bane at Central City,, Col.

Dr. Earl Wilson has located in Sterling, Ill.

DENTAL STUDENT A SUICIDE.

William Morris, a student at Northwestern University Dental School, committed suicide Sept. 1 at his home in Chicago.

Dr. S. A. Seal, formerly in the dental supply business in Indianapolis, is now practicing at Decatur, Ill.

Dr. Fred A. Upham's dental office at Manchester, N. H., was robbed of $50 worth of material Aug. 27.

REAPPOINTED.

Gov. Terrell reappointed Dr. Thomas Cole of Newman, Ga., as member of State Dental Board.

The dental office of Dr. Wightman at Manchester, N. H., was robbed of a quantity of gold, $40 in cash, a diamond and other property Aug. 29.

ONE MORE COMPLETE THIRD SET OF TEETH.

Mrs. William Baker lost her permanent teeth and bought the usual substitute. Recently she discovered the plates would not fit, and, upon consulting a dentist, a complete new set of teeth were found breaking through the gums. —*Muncie. (Ind.) Star.*

INSTRUCTOR RESIGNED.

Dr. John J. Scott has resigned his position as assistant in clinical operative dentistry in the University of Michigan, and will go to Rochester, N. Y., to engage in private practice.

BURGLARIES.

Burglars raided the offices of five dentists in York, Pa., Aug. 12th, stealing from each gold aggregating in value $300. The robberies were reported to the police by the victims—Drs. Rice, McKinnon, Bolton, Basehore and Ritchie. The burglars used the skeleton keys to open the offices.

J. O. McNeeley, loss $50; A. R. Rodgely, $90; H. C. McKay, $25; J. T. Hill, $125; J. M. Boydston, loss $50; all of Fairmont, W. Va. New York dentists, $100; J. S. Stone, $40; the last two of Clarksburg, W. Va.

Dr. F. W. Birch, formerly of Redwood Falls, Minn., is now located at Waterville.

The office of Dr. E. L. Smith of Martinsburg, W. Va., was robbed on the night of Aug. 10. Loss, $400.

Dr. J. F. Leigh has moved from Elkader, Iowa, to Evanston, Ill.

COMMITTED SUICIDE.

Dr. Harry C. Connor, a young dentist of Louisville, Ky., drank carbolic acid on the street in that city and died on the way to the hospital.

J. P. Reardon, Lawrence, Mass., robbed during August.

THE LADY AND THE DENTIST.

By Howard N. Lancaster, D. D. S.

No one knows, except herself and her dentist, that the Leading Lady's upper teeth are false, and as it would not be particularly advantageous to her to have the general public know, we will not mention her name.

Through a most unfortunate accident last winter these same teeth caused no end of trouble. It happened in this way. Every evening about 5 it is the Leading Lady's custom to eat a light meal and then retire to her room in the hotel for a nap, that she may feel fresh for the evening's performance. But on this particular evening something quite unexpected occurred.

She had laid her walking skirt across the center table in her room and was standing before the glass, dressing, when her attention was attracted by a slight rustle in the room, and, turning, she saw that her skirt, which she had perhaps placed upon the edge of the table, had fallen, dragging with it the tablecloth and some books to the floor. But that was not all. She had forgotten for the moment that her upper teeth also had been lying upon the table, and in walking across the room to pick up the skirt and cloth and books she heard an ominous crash beneath her dainty foot, and on looking down saw with horror that she had broken her plate into a hundred hopeless little bits.

It is a part of life upon the stage to be able to cope instantly with all sorts of unforeseen occurrences, and with this practical training those who follow the players' profession learn to think and act quickly in all emergencies.

Desperate as it was, the Leading Lady took in the situation in an instant. She stepped to the telephone and called a cap, attired herself in a street costume, put on a heavy veil and within half an hour entered the office of her dentist. The dentist was just getting ready to leave.

"Good evening, Miss ——. Well, well! What is the matter?"

Her reply was filtered through her handkerchief, which she held to her mouth.

"Matter enough! Teeth smashed to smithereens—here are the pieces—it's 5:30 now—must be in my dressing-room at 7:30. Doctor, I am at your mercy. What can you do?"

The dentist thoughtfully fingered over the pieces in a mournful way, shook his head and said: "Mending these is out of the question, Miss ——, but I think I can fix you up for to-night. Get into the chair, quick."

After about an hour of rapid and ingenious work he succeeded in making

a temporary plate out of a plastic substance and attaching to it, one tooth at a time, a set of teeth quite like the ones she had before.

The Leading Lady was overjoyed and after making an appointment for 10 o'clock the next morning she left for the theater.

The dentist sat down—in one of his easy chairs and, lighting a cigar, puffed away with the utmost comfort, enjoying that supreme satisfaction which comes from having accomplished something—from having pleased, and not only having pleased some one else, but having pleased one's self. At length, having finished his cigar, he began to arrange his case of instruments for the next day, when suddenly he cried aloud: "My God! What have I done?" and sank back into his operating chair.

On replacing some bottles, two of which looked almost exactly alike, he had made the discovery that instead of having used an alcoholic, waterproof, glue-like preparation to fasten the teeth upon the temporary plate, as he had intended, he had used a similar material, but which was quite soluble in the fluids of the mouth.

The pity that night was "Camille" and with the cold sweat starting from his forehead, in his imagination he pictured the Leading Lady before the footlights sobbing upon the shoulder of Armand's father, imploring him not to separate her from his son, her tears falling one by one upon his coat; her teeth falling one by one upon the stage.

He could stand the agony of his self-torture no longer. He grabbed his hat, hastened down to the street, jumped into a cab and gave the order: "To the —— theater. Alighting at the stage door, he rushed in with the aspect of a madman and reached the stage just as the Leading Lady was going on for the first act. With frantic gesture and with voice almost choked he begged to speak with her; but in a way quite complacent and yet imperative, half smiling, she beckoned him back.

At this point his desperation broke all bonds and he made a rush for the center of the stage, but he had gone scarcely a step when two stalwart stage hands grabbed him, forced him into a chair and held him there.

At the end of the first act the Leading Lady stepped over to where the dentist was being held prisoner, made a sign for the stage hands to retire and soothingly said in what was almost a whisper:

"I'm awfully sorry, doctor. I knew what you wanted to say to me, but I couldn't wait. I had to go on. On my way to the theater I felt something was wrong, and when I reached my dressing-room I found the teeth were coming loose from the plate. I got a wax candle from the property man, put it into my chafing dish and lit the burner. When the candle had melted I dipped the teeth into the liquid wax and then held them in ice water till the first act. They seem to be holding all right now, but you'd better excuse me while I get to the ice water again, before I have to go on. See you in the morning."

The dentist asked the man at the stage door the direction to the nearest buffet.

MORE ROBBERS.

Burglars visited the dental parlors of Dr. G. E. Mitchell and Dr. J. S. King at Haverhill, Mass., and secured $200 worth of gold and platinum. Entrance was effected at each place by prying open the transom over the office door.

The offices of Dr. R. P. Pakin and Dr. Charles H. Webb, at Attleboro, Mass., dentists, were entered by thieves, and considerable gold and platinum stolen, Aug. 27th.

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